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VOL. 86 NO. 8

textile bulletin

AUGUST · 1960

The 1960 Cotton Research Clinic
(Page 35)

Eagle & Phenix Revamps Its Cloth Room . 46
Annual Meeting Of The S.T.A. 49
Package Drive Units In The Mill 53
How % CV Helps Control Production . . . 57

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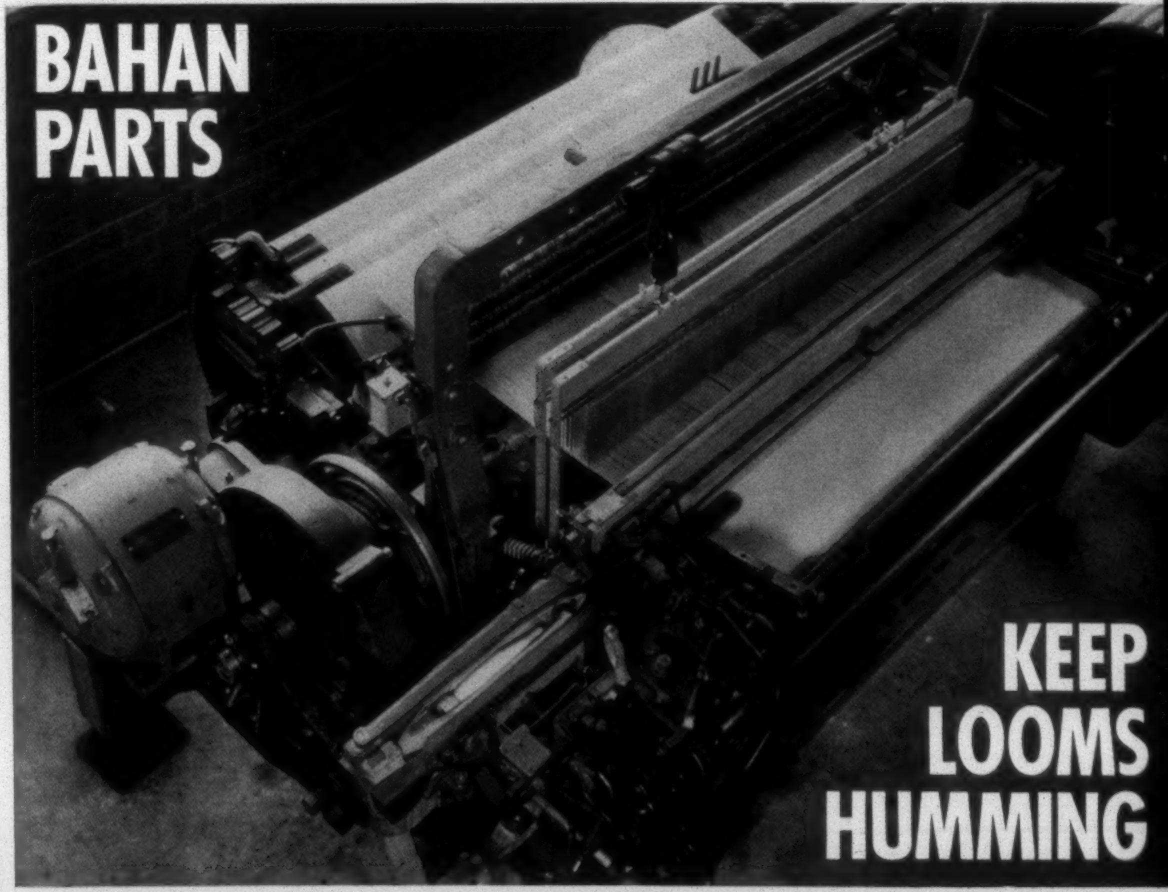
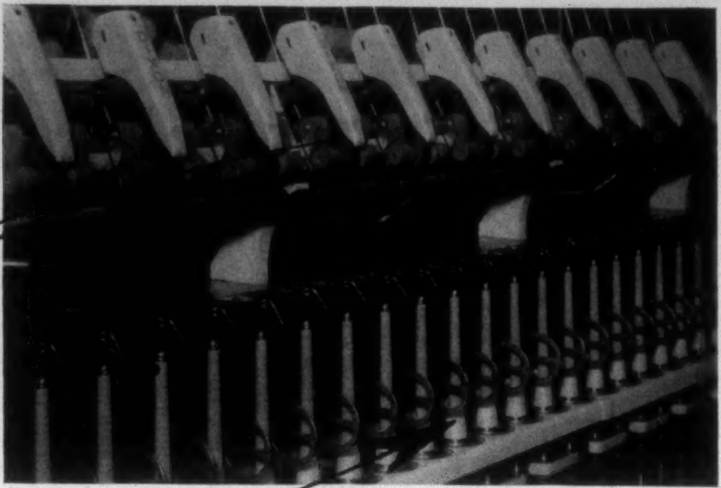


Satisfying the mammoth demands of today's cloth market requires peak production performance in the weave room. Downtime, due to parts failure, is a costly bugaboo. Keep your looms humming around-the-clock by using Bahan precision-made, long-life replacement parts.

BAHAN TEXTILE MACHINERY COMPANY, INC.
GREENVILLE, SOUTH CAROLINA

With Dixon's all-new CAVALLA-ROTH* DRAFTING



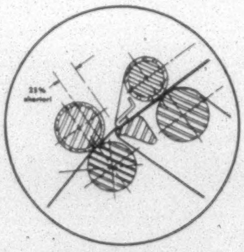
*Pat. Applied for.

. . . the pay-off is in the package!

Cavalla-Roth out-features them all. Into this advanced spinning drafting changeover, Dixon engineers have built advantages not obtainable even on the newest spinning frames. And each of these design firsts is aimed at giving you one thing: top quality yarn at lowest cost per pound.

Cavalla-Roth gives full fiber control —

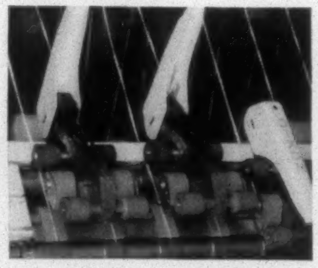
Specially shaped apron nose bar and tensioned lower apron reduce by 25% the uncontrolled space between middle and front rolls. Here, at the critical point in the drafting process, Dixon's unique system controls the fibers, assuring new strength and evenness in the yarn you produce.



Cavalla-Roth sets a new high in LOW MAINTENANCE —

This is the only NO OIL changeover available. All bearings — both for top rolls and bottom steel rolls — are either of Dixon's exclusive "lube-less" RULON or of the "life-lubed" anti-friction type. Cavalla-Roth's clean Tension Weighting system cuts out dozens of lint-catching surfaces . . . there are absolutely no springs, weights, stirrups or levers below the steel rolls to collect lint and up cleaning costs. And of course, improved fiber control reduces the problems and costs of ends down. Actual mill experience proves this new system is a real maintenance miser.

Cavalla-Roth Weighting — PERMANENT YET INFINITELY VARIABLE . . . ACCURATELY MEASURABLE



The new Tension Weighting system permits positive and permanent setting of top roll weight within a 100 lb. range . . . and most important, allows for accurate measurement of this setting with Dixon's Tension Meter. There are no levers or springs to build up friction, lose adjustment, and vary weighting. The C-R top arm (automatic cam latching) simplifies spinners supervision by making possible roll examination or service without time consuming weight lifting or hand latching. Roll spreads can be adjusted for drafting up to $1\frac{9}{16}$″ fibers in two zone drafting and up to $3\frac{1}{2}$″ fibers in single zone drafting.

Cavalla-Roth gives APPLICATION FLEXIBILITY

Cavalla-Roth drafting can be tailored to meet your needs: 1) as a complete unit from roller beam up on 60°, 45° or 30° roll stands, 2) as a changeover, using the mill's middle and back steel rolls, 3) as a top roll changeover, using the mill's stands and steel rolls, or 4) as Cavalla-Roth P.C.O. . . . a partial changeover providing the advantages of better fiber control at a minimum cost per spindle.

For photos, engineering specifications, and costs of Cavalla-Roth, write:

Dixon Corporation • Bristol, Rhode Island
Plants in Bristol, R. I. and Charlotte, N. C.
Sales and Service representatives throughout the Industry

Dixon

ENGINEERED SPINNING CHANGEOVERS SINCE 1876

SONOCO

"KNOW-HOW"

IN ACTION

Lacquer tip research at Sonoco

Constant research for better, economical paper carriers!

No item in the Sonoco line is ever static . . . improvement is *constantly* sought. As an example, Sonoco makes its own lacquers which have unique properties not available in types produced commercially. When applied to the cone nose or tube end, these lacquers, developed after years of research, produce a smooth, hard surface resistant to moisture and coning oil. For yarn identification, twenty-eight standard colors are available that may be used singly or in combinations. And, while these and other coatings developed by Sonoco meet the industry needs of today, research at Sonoco continues so future requirements can be fulfilled.

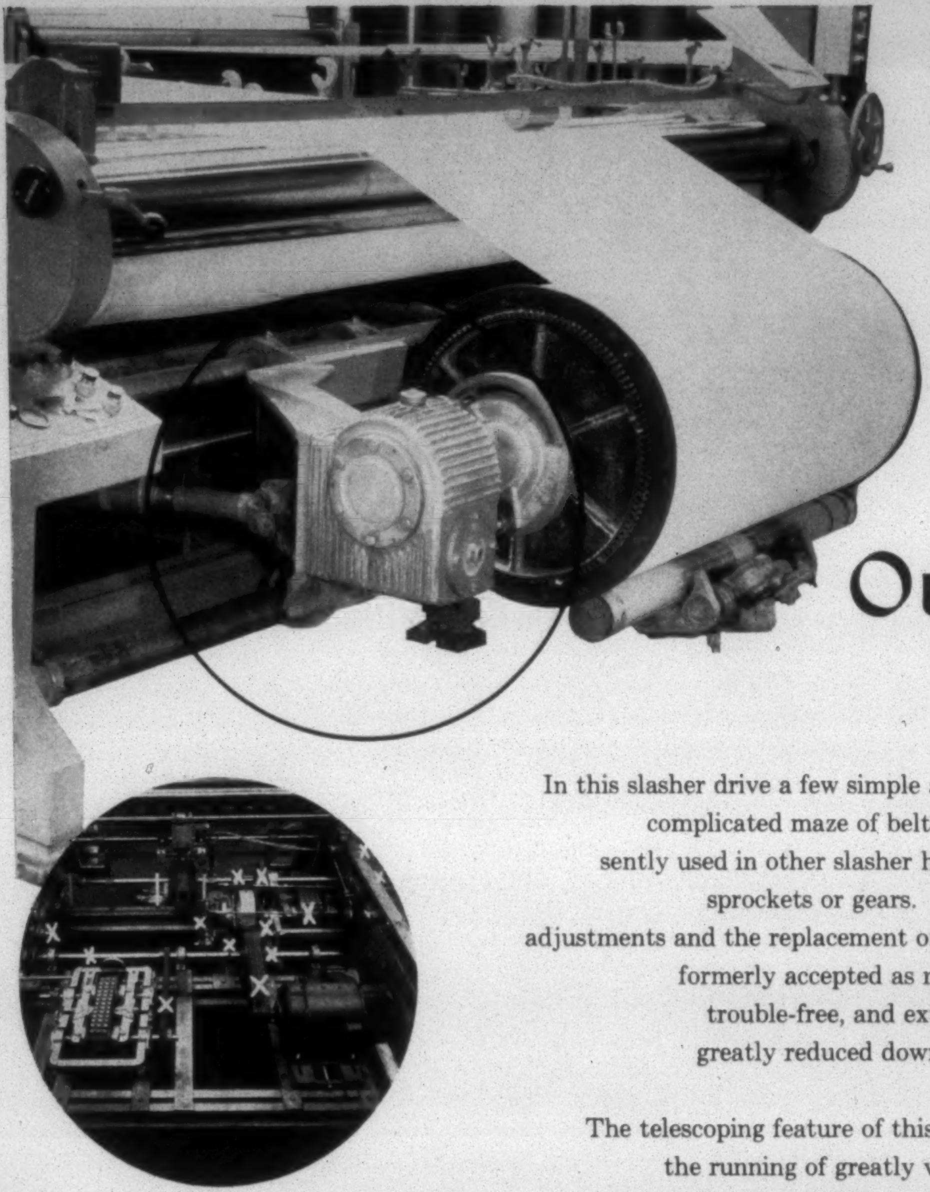
Sonoco lacquers are typical of the advancements which have resulted from a continuous program to provide economical carriers for better, faster production. *Only Sonoco,* in its field, offers the necessary knowledge, skill and capacities to meet the ever-changing techniques of the textile industry. *Let Sonoco experience help you!*

SONOCO

Products for Textiles

See Sonoco!
Southern Textile Exposition
Greenville, S. C.
October 3-7, 1960
Booth 244

SONOCO PRODUCTS COMPANY, HARTSVILLE, SOUTH CAROLINA • Mystic, Conn. • Akron, Ind. • Lowell, Mass. • Holyoke, Mass • Phillipsburg, N. J. • Longview, Texas • Philadelphia, Pa. • La Puente, Calif. • Fremont, Calif. • Atlanta, Ga. • Brantford, Ontario • Granby, Quebec • Mexico City



X These parts are eliminated

Don't Be Chained to Outmoded Drives

In this slasher drive a few simple and rugged parts replace the complicated maze of belts, chains, sprockets, etc. presently used in other slasher head drives. It has no sliding sprockets or gears. This eliminates the constant adjustments and the replacement of expensive parts which were formerly accepted as necessary. The result is long, trouble-free, and extremely quiet operation with greatly reduced downtime and consequent higher production.

The telescoping feature of this Torque Tube Drive permits the running of greatly varying width beams without projecting spindles. In addition, only Cocker's new HD Cylinder Section construction permits removal of bottom cylinders without removing top cylinder.

The Cocker Torque Tube Drive is standard equipment on all Cocker Slashers, whose other features remain as before — rugged construction, complete and accurate push button controls, full instrumentation, new fast and simple beam doffing, and Cocker's patented Type B Beam Drive which provides constant adjustable tension regardless of speed or load. Speeds up to 184 ypm and 20% to 25% more yarn per loom beam with production rates of over 1,650 lbs. per hour. Write for full information today.

Visit Cocker's display, Booths 836 and 837, Southern Textile Exposition

*Pat. Applied For

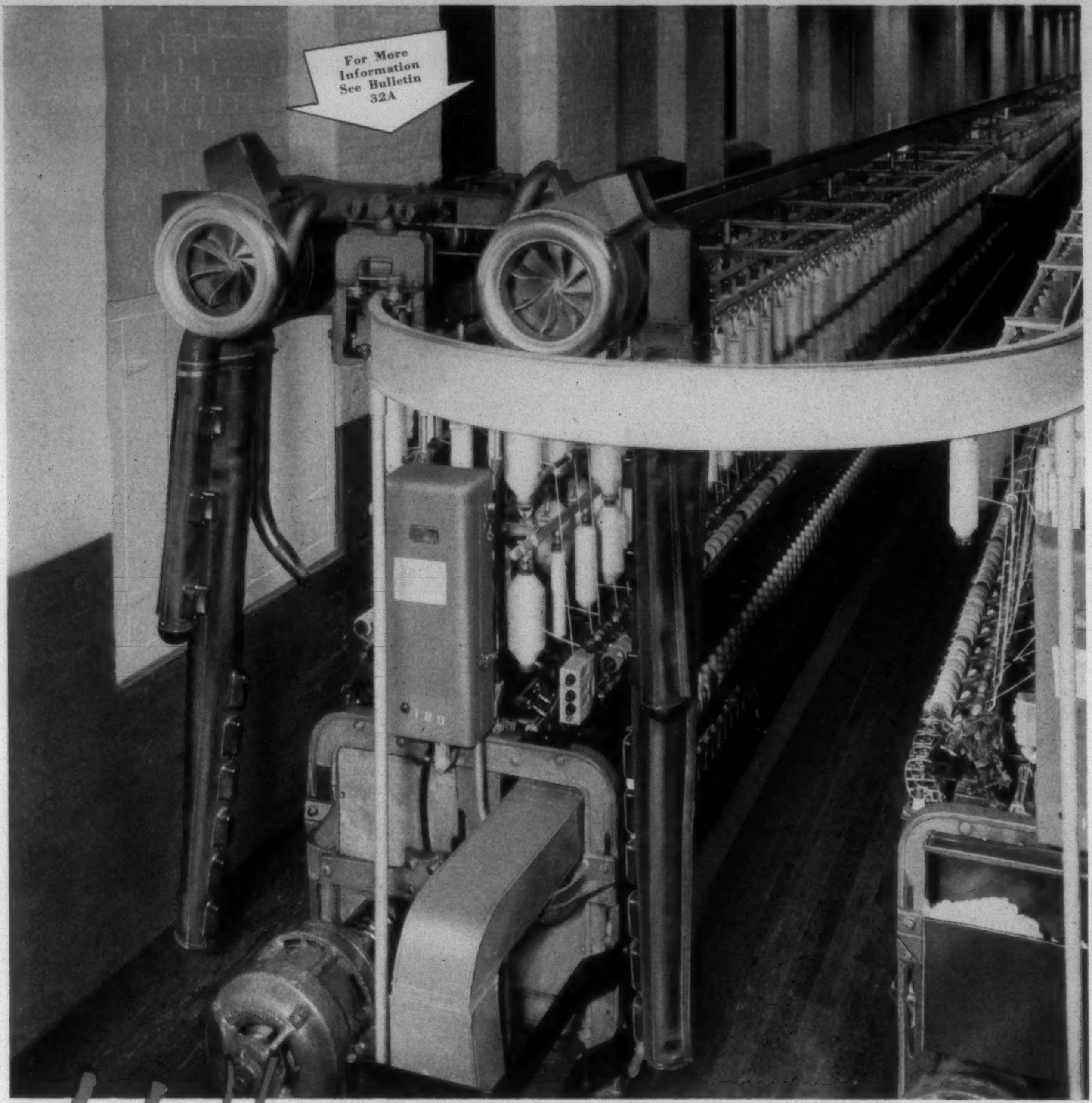
COCKER MACHINE & FOUNDRY COMPANY

IN CANADA:
Contact W. S. Clark
Montreal, Canada
Oxford 7-2242

IN MEXICO:
Ing. J. Via, Jr.
I. La Catolica 45-911
Mexico, D. F.

PLANT & OFFICES
at Ranlo, N. C.
MAILING ADDRESS:
Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT



Where

SPECIALIZED FRAME CLEANING BY

BAHNSON CROSS-JET

PAYS MORE PROFIT

- In cleaning more frames, more often
- In cleaning more overhead area
- In cleaning more track area plus conductor bars
- In reducing track and wheel wear

PARTIAL LIST OF USERS

Burlington Industries, Inc.
Carolina Mills, Inc.
Cone Mills Corp.
Dominion Textiles Co., Ltd.
Erwin Mills, Inc.
Glenwood Mills, Div. of Mayfair Mills
Harmony Grove Mills, Inc.
Joanna Cotton Mills Co.
Sadie Cotton Mills, Inc.
Spartan Mills
J. P. Stevens & Co., Inc.
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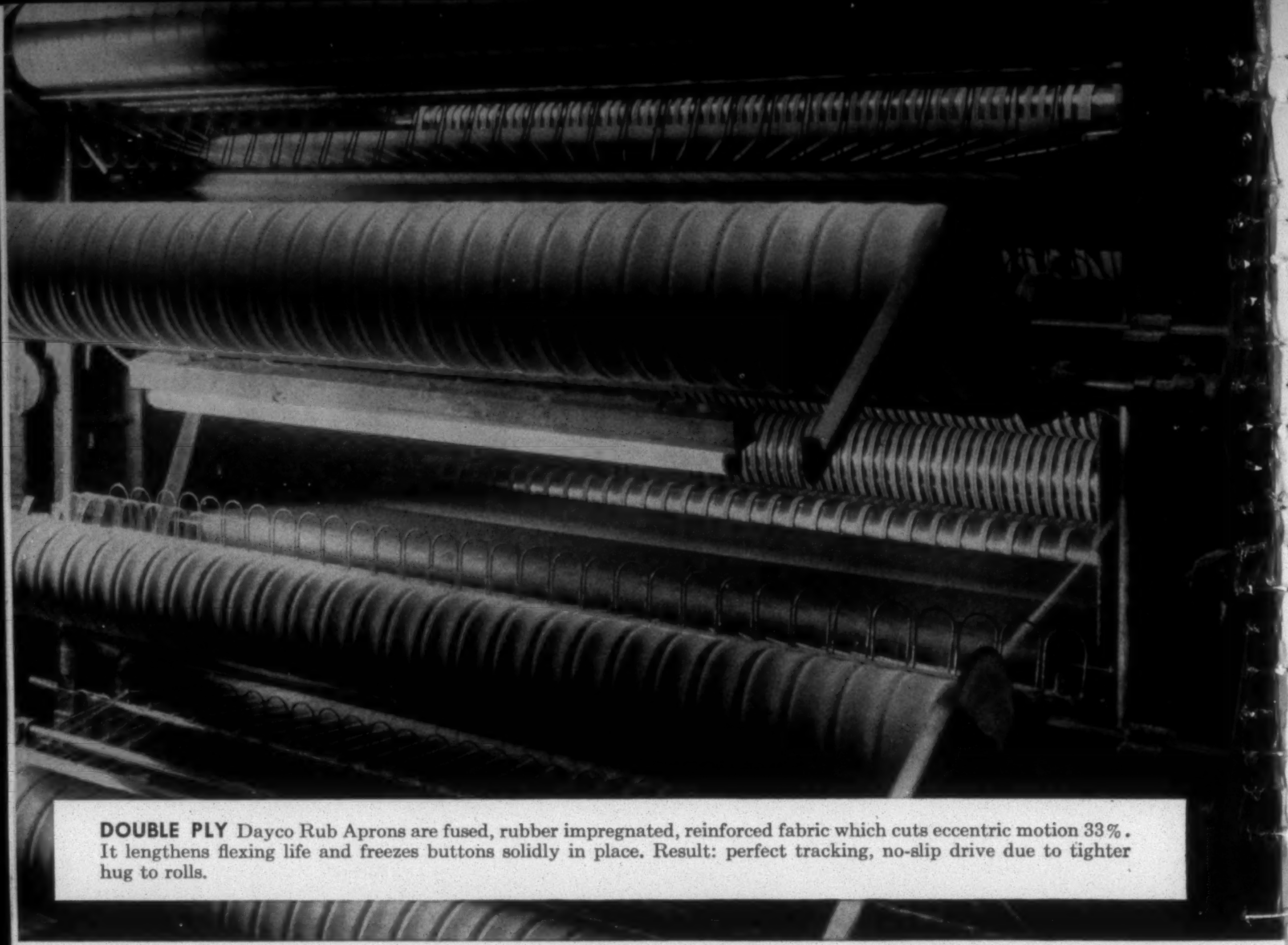
Bahnson

AIR-O-MATION

THE BAHNSON COMPANY
WINSTON-SALEM, N. C.

OTHER BAHNSON CLEANERS:

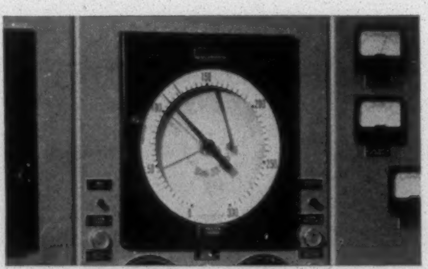
- AERO-SWEEP—FOR CEILINGS, WALLS
- ROV-AIRE—FOR ROVING
- DUO-BLAST—FOR LOOMS



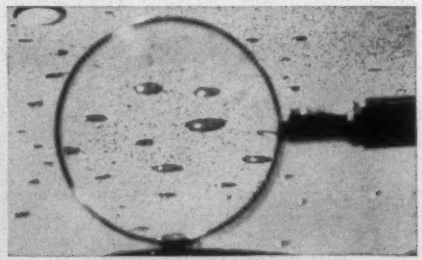
DOUBLE PLY Dayco Rub Aprons are fused, rubber impregnated, reinforced fabric which cuts eccentric motion 33%. It lengthens flexing life and freezes buttons solidly in place. Result: perfect tracking, no-slip drive due to tighter hug to rolls.

DELIVERS 33% MORE YARN UNIFORMITY. . . . . . .

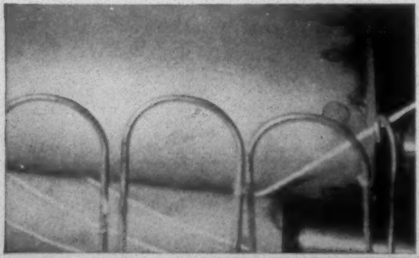
IMMUNE TO EMULSION OILS



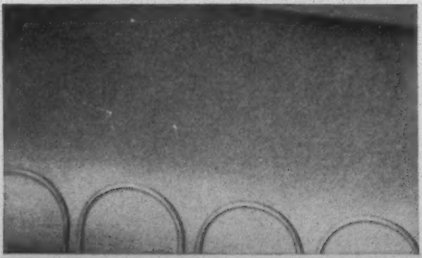
NO TEMPERATURE PROBLEMS



NO HUMIDITY PROBLEMS



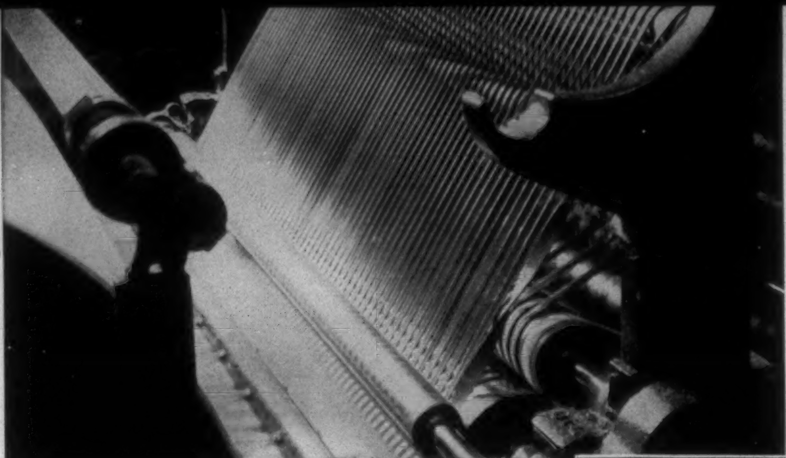
REINFORCED FOR BETTER TRACKING

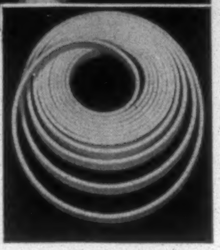


NO WOOL PIGMENT ABSORPTION

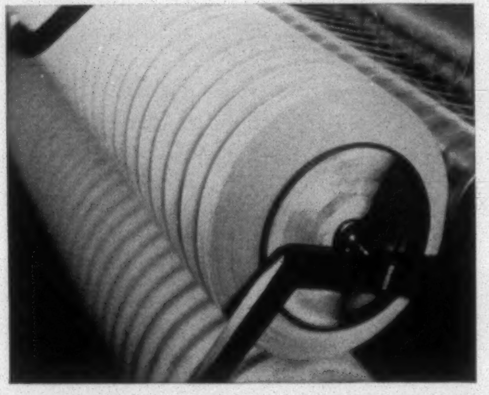
NO GLAZING, NO SLICKING

NO SWELL with Dayco Rub Aprons. Their special formulated texture keeps them free of emulsion oils that cause growths and rubbing surface breakdowns on ordinary aprons. Temperature and humidity changes have no effect on the Dayco Rub Apron. Color pigments from dyed wool are not absorbed . . . slicking and glazing are reduced to a negligible minimum.





MINIMUM MAINTENANCE, top card efficiency, better web uniformity are yours with Dayco Endless Condenser Tapes. Precision compounding prevents stretch and cracking, reduces take-ups and groove-jumping. Oil deterioration, static are eliminated. The permanent square edge permits close-tolerance nesting for cleaner cuts and minimum stealing. They're longer lasting—yet original cost is lower.



HIGHEST COEFFICIENT OF FRICTION of any apron on the market. That is the important difference in this remarkable Dayco Rub Apron. It means proper yarn condensing and more high quality yarn per machine. Because the surface keeps renewing itself, you also get longer life with heavy-duty Dayco Rub Aprons.

. . . . . PLUS MORE YARN PER CARD

with DAYCO RUB APRONS

Here with Dayco Rub Aprons is a range of special built-in textures answering all the individual rub needs of any mill. Each has the highest coefficient of friction of any apron available today. Each is so designed and formulated that it maintains its condensing efficiency unchanged through its lifetime of use.

The unique advanced 2-ply construction minimizes need for adjustments, delivers longer trouble-free service, requires less maintenance, no downtime.

Look for more yarn per card and 33% greater yarn uniformity with cards equipped with Dayco Rub Aprons—thanks to Dayton's exclusive surface texture that stays good from the first day of use without change.

Ask your Dayco Representative to set up a trial installation. Phone or write Dayco Textile Products Co. (Formerly Dayton Rubber Co., Textile Division) 401 S. C. National Bank Bldg., Greenville, S. C.

Dayco
TEXTILE PRODUCTS CO.
Dayco

Divison of Dayco Corporation

OVERSEAS PLANT: THE DAYTON RUBBER CO. LTD., DUNDEE, SCOTLAND

Reasons behind the fast-growing trend to DAYCO SYNTHETIC CONDENSER TAPES

THE SUCCESS of Dayco synthetics in cots and aprons, loop pickers and lug straps is also effecting a big change in the use of conventional condenser tapes. "Leather men are weather men" they say because the expert can look at a piece of leather and tell you whether the animal from which it came had a dry year. This legend is the clue to the growing acceptance of Dayco synthetic condenser tapes, bringing as they do, an end to the constant humidity and weather problem.

But the Dayco synthetic condenser tapes are earning a great deal more attention for other good and practical reasons. One is the fact that Dayton, for instance, can now make them to closer tolerances. This means a remarkable precision fit in the steel roller grooves.

The Dayton Endless Condenser Tape besides possessing very close-tolerance, non-permanent stretch has a permanent square edge to eliminate groove-jumping, twisting and turn-over.

These Dayco condenser tapes have ended oiling maintenance problems and costs and the nuisance of oil deterioration.

The reason Dayton Endless Condenser Tapes last longer, yet cost less, is a small consideration compared to the really big reason for the switch to Dayco tapes. Top card efficiency, better web uniformity, cleaner cutting, minimum stealing are the real reasons.

24 HOURS A DAY

A Better Cloth for you
with Clinton Products from corn

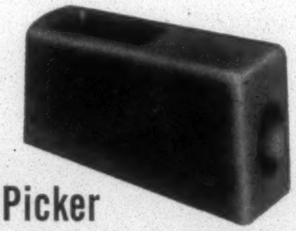
Clinton Starches provide better results in sizing warps because of uniform application of size, and increased starch penetration for smooth warps and minimum shedding at the slasher and loom. See your Clinton salesman today.

CLINTON TECHNICAL SERVICE is freely available upon request.

CLINTON

CLINTON CORN PROCESSING COMPANY, CLINTON, IOWA

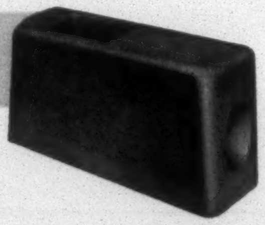
Leading Mills* choose this Gates Loop Picker



Super Vulco Picker

Newest addition to Gates line of pickers. Pale pink color. Excellent for intermediate applications requiring both economy and durability.

There's a Gates Picker for Every Loom . . .



Vulco Picker

Molded of rubberized fabric . . . low cost. Designed for use in weaving cottons and specialty-type fabrics where low initial picker cost outweighs all other factors.

First in the Gates line of 3 outstanding loop pickers is Tex-Hide . . . a product of Gates Specialized Research.

Tex-Hide is a super-tough, highly resilient material that assures you of exceptionally long service life for Loop Pickers.

Because Tex-Hide provides all the shock absorbing capacity and resilience of natural leather, smoother loom operation over a longer period is assured.

Highest quality in cloth is maintained, and down time costs greatly reduced, for these 2 reasons:

1. **Maximum Resilience and Shock-Absorbing Capacity**—*catches the shuttle without bouncing; thus preventing filling thread from breaking or sluffing off bobbin.*
2. **Coolness**—*by running cool, the heat generated in catching and throwing the shuttle is dissipated more rapidly.*

For better, faster, more economical production, equip your looms with Gates complete line of *specially engineered* accessories . . . available from Gates Textile Distributors.

**Names supplied upon request.*

Gates Distributors are in the YELLOW PAGES

The Mark of Specialized Research

Gates®

The Gates Rubber Company
Denver, Colorado
Gates Rubber of Canada Ltd., Brantford, Ontario

TPA

Take-up Roll Coverings
Card Bands
Cone and Evener Belts
Spinning Frame Drives

Reversible Pickers

Tex-Hide Harness Straps

Thin-Tex, Vulco, Tex-Hide and Super Tex-Hide Lug Straps

4-in-one Check Straps
Multi-Check Straps

Gates Textile Accessories

T. B. Blackwell, Overseer of Spinning, Arcade Cotton Mill Division of Mount Vernon Mills, Rock Hill, South Carolina, discusses yarn quality with Armstrong representative Wayne Downs.

Minimize spinning problems, produce top-

Modern high draft frames are designed to deliver maximum production of high-quality yarn. And the right spinning cots can help them do just that.

If front roll lap-ups . . . excessive eyebrowing . . . or yarn irregularities are reducing production or hurting yarn quality, a switch to Armstrong Accotex Cots may be the answer.

Accotex Cots are made of compounds that are especially engineered to combat these common spinning problems. New anti-static cots have cleared up stubborn front-roll lapping in many mills.

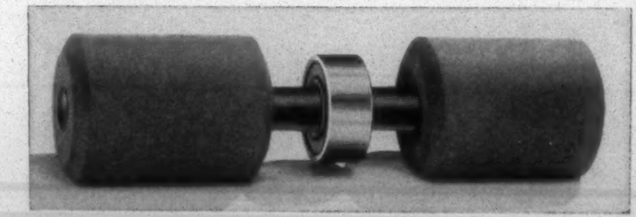
In other mills, Accotex NC-762, another anti-static material, has stopped serious eyebrowing on spinning and roving frames with flat clearers. In addition, many mills report substantial reduction in total waste where NC-762 Cots are used.

On some drafting systems, a softer cot compound often helps to reduce yarn irregularities and improve break

quality yarns with Armstrong Accotex Cots

strength. The Accotex line includes soft compounds for service on these frames.

Whatever your spinning problem, it's a good idea to talk things over with your Armstrong man. Chances are he can suggest an Accotex Cot that will meet your specific need. Call him, or write for more information to Armstrong Cork Company, Industrial Division, 6508 Davis Ave., Lancaster, Pennsylvania. Armstrong textile products are available throughout the world.



Armstrong

ACCOTEX COTS

1860-1960 – Beginning our second century of progress

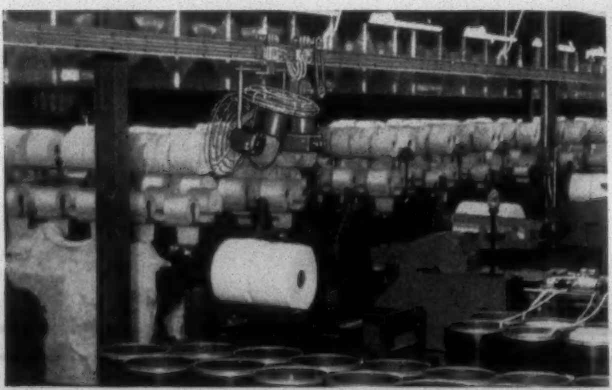
Now...keep your work areas clean automatically, with specially designed Amco Cleaners!

Amco has developed a wide selection of automatic cleaning equipment . . . designed to cut down manual cleaning, improve quality, and step up mill production.

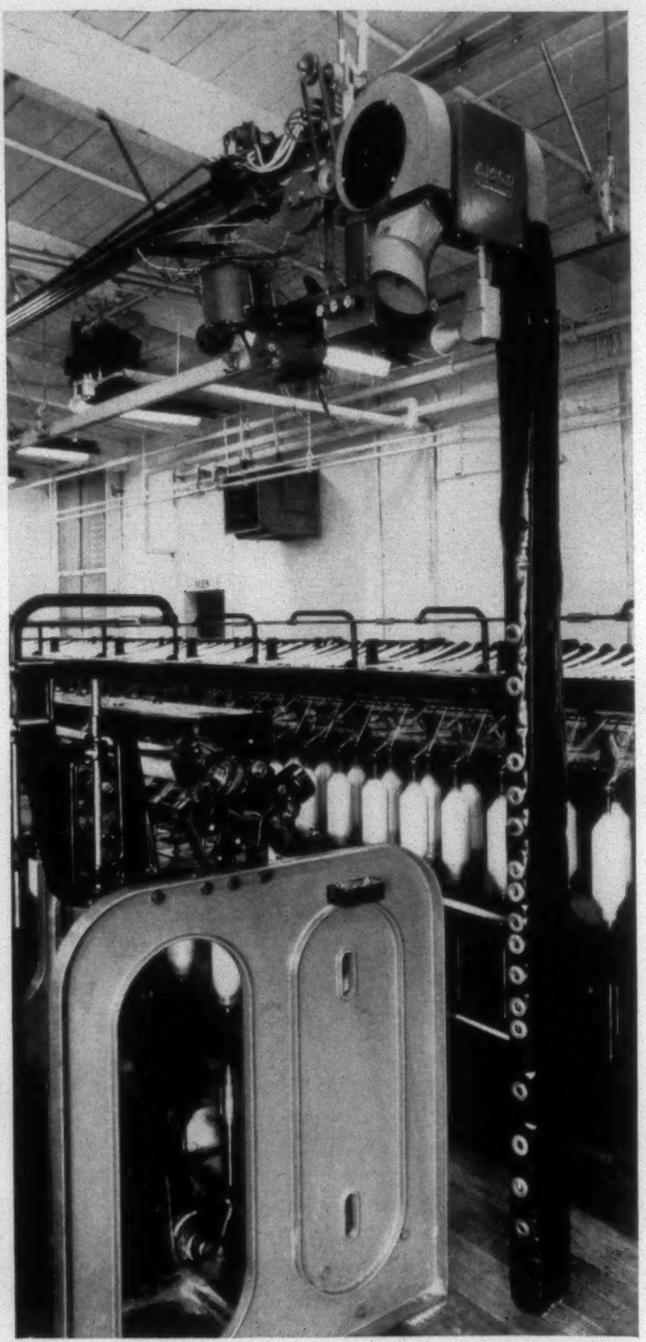
For money-saving facts about Amco Cleaners, call American Moistening Company — an organization with more than 70 years' experience serving the textile field.

Helicone Loom Cleaners improve quality of fabrics by preventing waste accumulation on stop motions, drop wires, harnesses and reed caps.

Amco Loom Cleaners over Draper shuttleless looms. Sheeting is being woven at high relative humidity.



Amco Ceiling Cleaner provides automatic cleaning of ceiling, beams, walls and other surfaces. Excellent for card room areas.



Amco's electronically controlled Roving Frame and Ceiling Cleaner. Air delivery boot takes care of specific lint-collecting trouble spots.

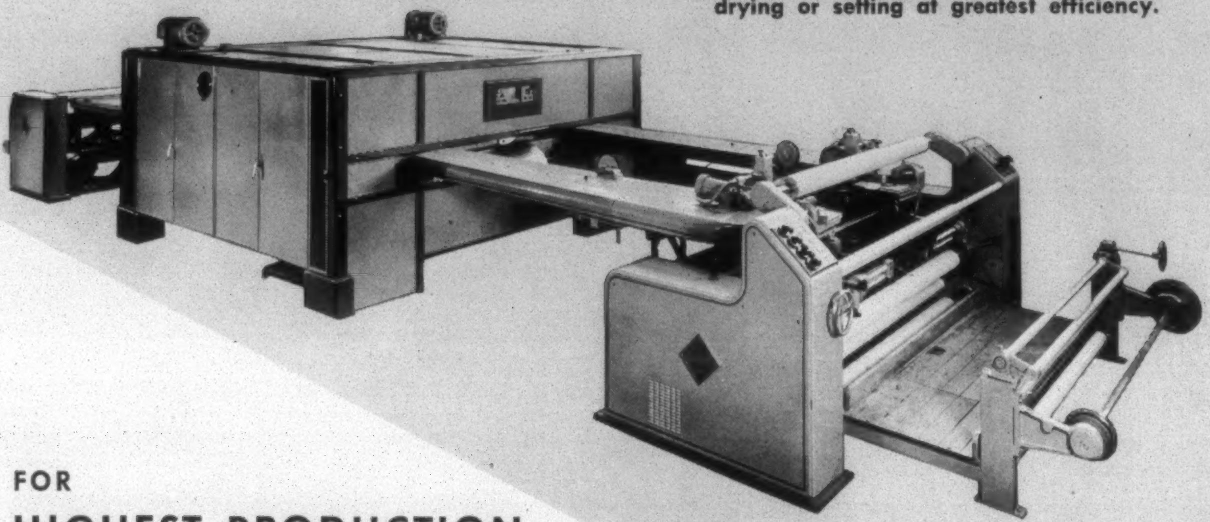
AMCO

SINCE 1888

Air Conditioning Equipment — Textile Specialties

American Moistening Company, Cleveland, North Carolina
Branches: Atlanta, Ga., Providence, R. I., Toronto, Ont.

SINGLE LAYER TENTER FRAME with combined pin-clip chain permits speeds up to 250 yards per minute. Integral gas heating system within housing or steam radiators provide maximum drying or setting at greatest efficiency.



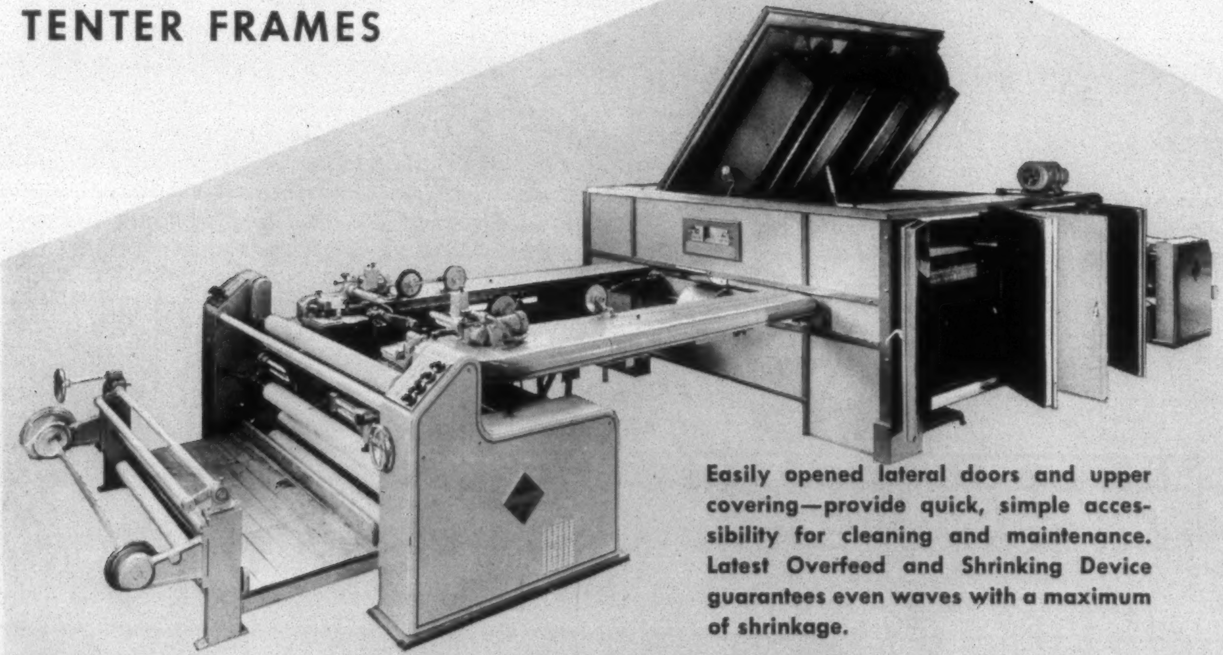
FOR

HIGHEST PRODUCTION

leading American mills depend on

FAMATEX

TENTER FRAMES



Easily opened lateral doors and upper covering—provide quick, simple accessibility for cleaning and maintenance. Latest Overfeed and Shrinking Device guarantees even waves with a maximum of shrinkage.

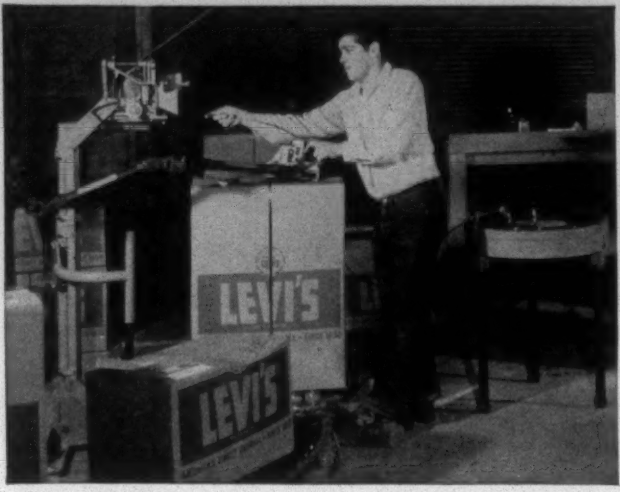
Write for complete details and mill references.

ROBERT REINER, INCORPORATED

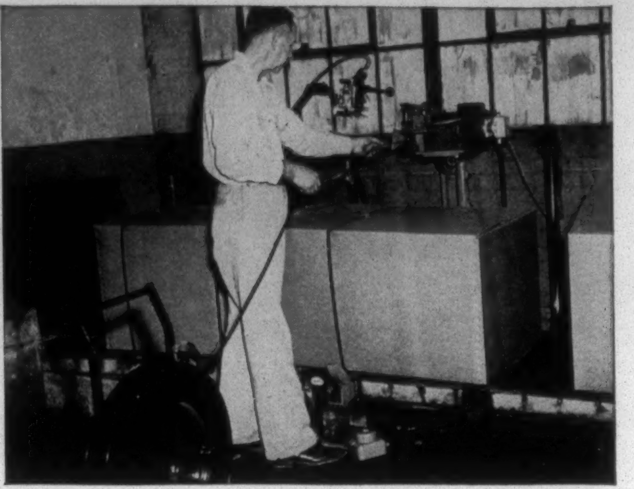
Telephone: UNion 7-0502—From New York City call LOngacre 4-6882.

WEEHAWKEN (Only 10 minutes from Times Square by direct bus) NEW JERSEY

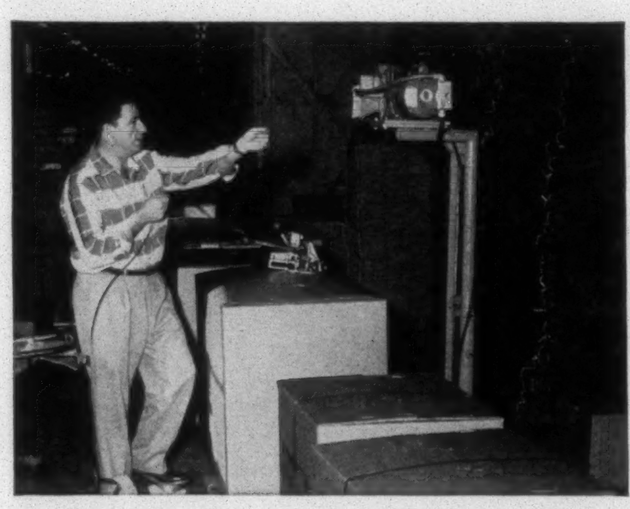
AN HONORED NAME IN TEXTILE MACHINES SINCE 1903.



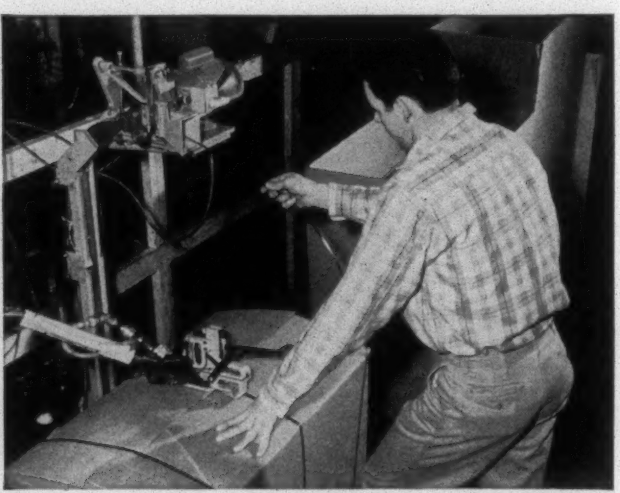
TROUSERS—One man works two conveyorized strapping stations...easily straps and weighs 440 cartons of various sizes per day, using Signode power strap feeders and Model A hand operated strapping tools. Production increased, and savings of 55% reported.



THREAD AND YARN—One man easily straps 300 cartons per day, four straps per carton, with a Signode power strap feeder and a Model AP air powered strapping tool. Operator has time for other duties. Two men were formerly assigned to carton strapping.



CHENILLES—One man straps 400 cartons per day. Cartons vary widely in size and weight. The operator has time for other duties, although two men formerly were needed. Signode power strap feeder and a Signode Model A tool are used.



FINISHED PRINT GOODS—One man straps 500 cartons a day, three straps per carton, using a Signode power strap feeder and a Model AP air powered strapping tool. Cartons vary greatly in size. Production has been more than doubled.

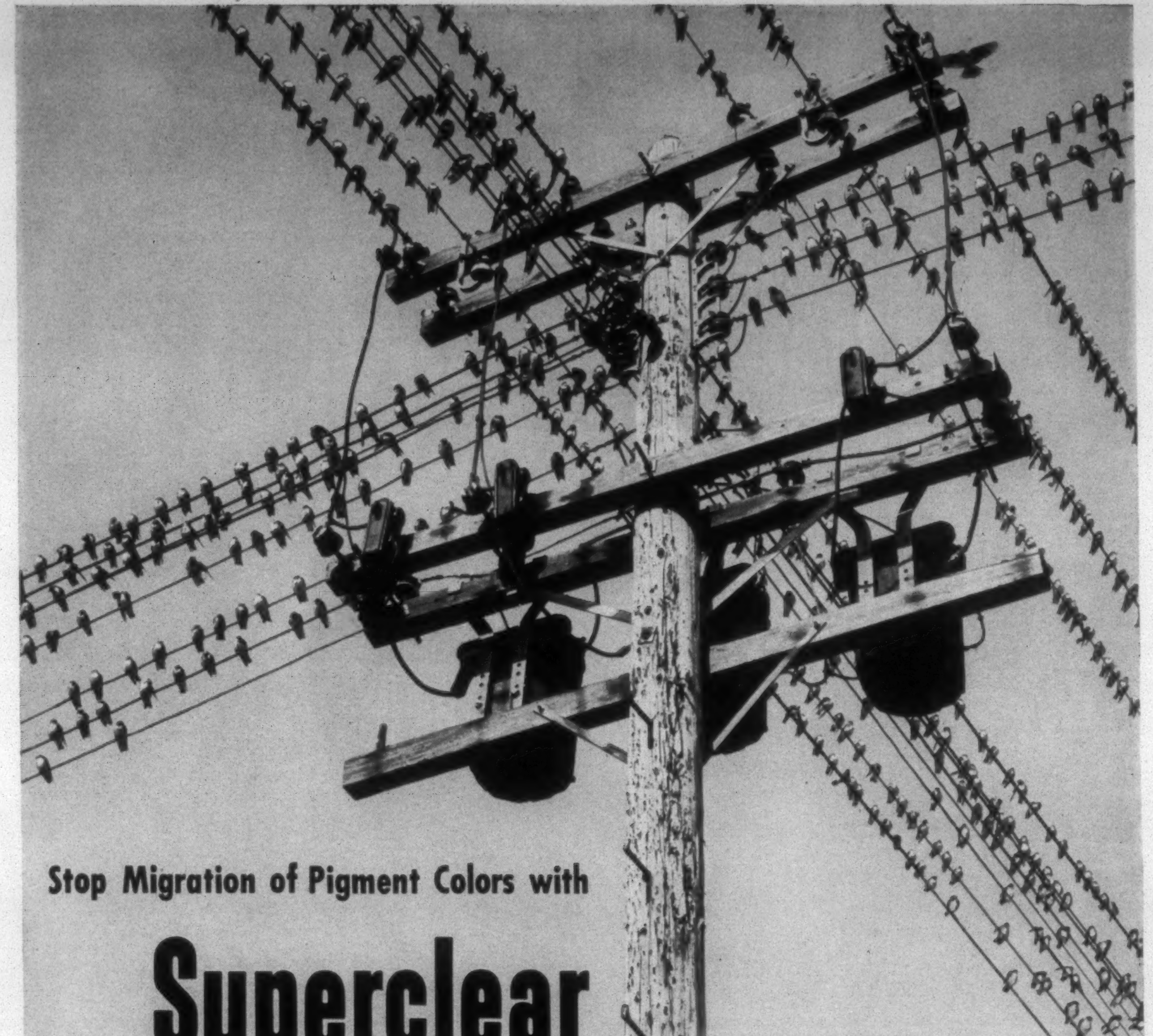
New low cost Signode power strap feeder a real money saver on textile packages

The power strap feeder is an independent, motorized, foot-pedal operated device for putting strap around big packages. It saves walking around...saves standing around...saves enough to pay for itself in short order. For more information, call the Signode man near you, or write to Signode for "Power Strap Feeder" folder.

SIGNODE

First in steel strapping

SIGNODE STEEL STRAPPING CO.
2665 N. Western Avenue, Chicago 47, Illinois
Offices Coast to Coast. Foreign Subsidiaries and Distributors World-Wide
In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto



Stop Migration of Pigment Colors with

Superclear

Well-known Printing Gum Now Enters The Dyeing Process

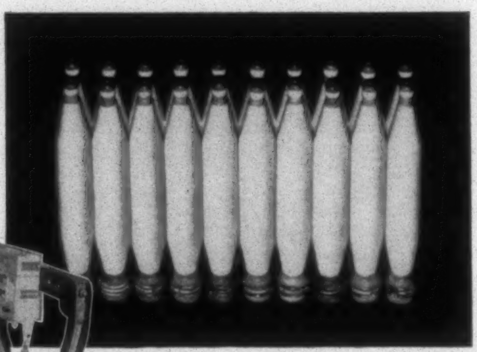
Are you pad dyeing synthetics with dispersed pigment colors? Use Superclear in the pad liquor. It eliminates shading from selvedge to selvedge. And there's no tailing off of shades when Superclear is present in the pad liquor. In vat-acid continuous dyeing, use Superclear with the pad liquor for level shades with any mixture of vat dyes. Superclear prevents migration of the pigment; assures uniform shades from end to end. For pad-steam continuous vat dyeing, absolutely uniform pigmentation is obtained by adding Superclear to the pad liquor. A full range of level shades is obtained, from pastels to deep tones, plus excellent fixation without migration of pigment.

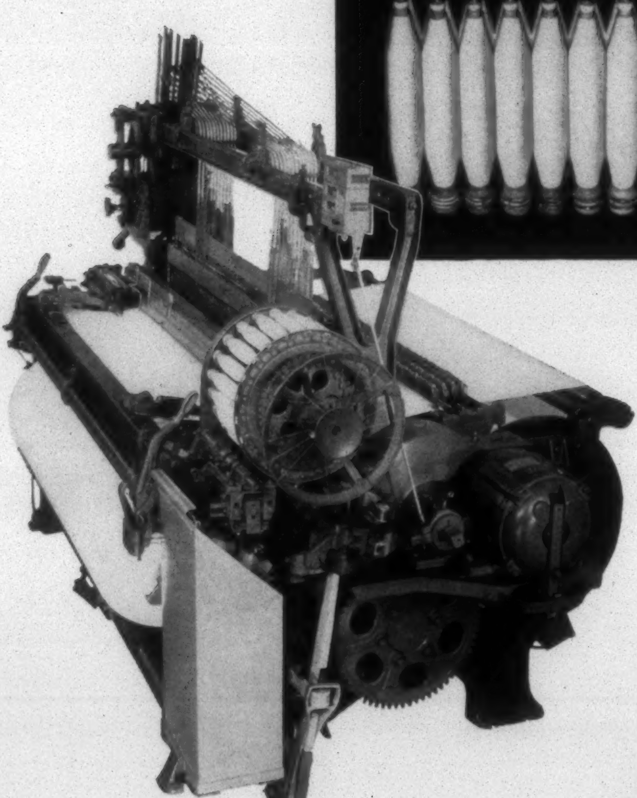
LOMAR PW is recommended as a successful suspending agent. For those who add wetting agents in these operations, we have a full line to offer. Contact Jacques Wolf today for your sample and complete information.

JACQUES WOLF & CO.
Chemicals PASSAIC, N.J.

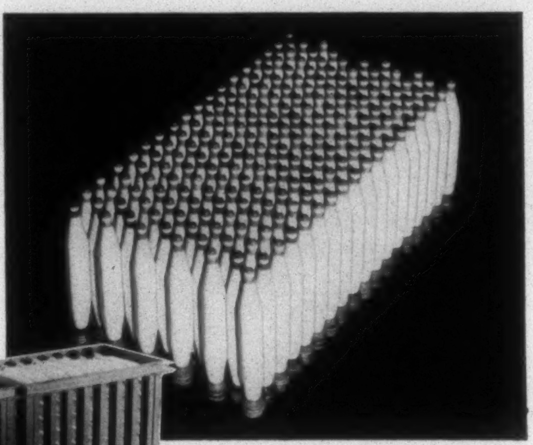
Plants in: Clifton, N.J., Carlstadt, N.J., Los Angeles, Calif.

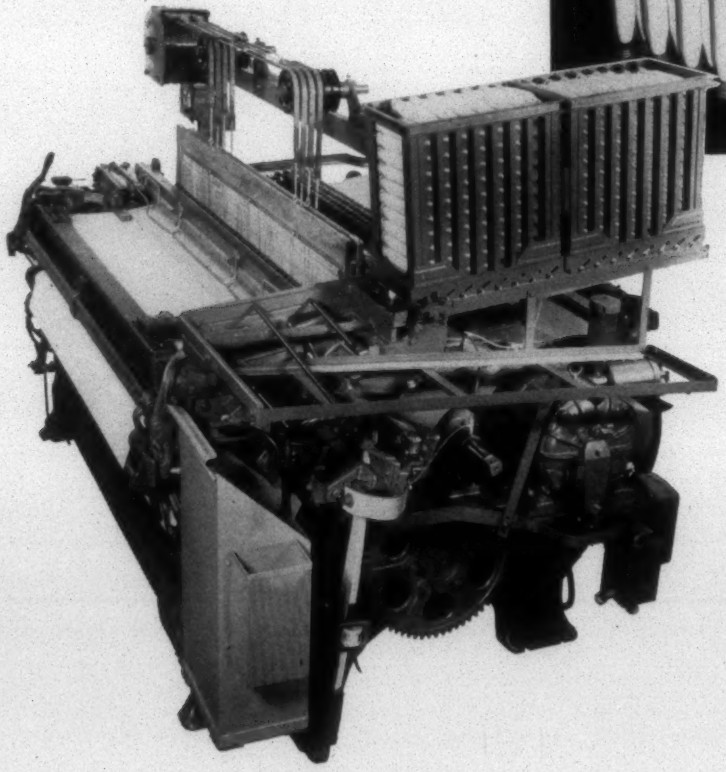
REDUCE FILLING HANDLING...





TO A MINIMUM





The Draper Automatic Filling Magazine *with a bobbin supply of as many as 192 bobbins** reduces weave room costs.

This increased bobbin capacity, over the conventional Rotary Battery *eliminates much of the cost of delivering filling yarn to the loom.* More continuous loom operation, cleaner yarns and fewer cloth seconds are also direct advantages gained from the use of this magazine.

Compare the Draper Automatic Filling Magazine with the conventional battery and see for yourself the many benefits that can be obtained.

For additional information consult your Draper representative.

**1¼" diameter bobbins*

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For The Textile Industry's Use

— NEW MACHINERY, EQUIPMENT AND SUPPLIES —

Nonwoven Saturator

A new type saturator, said to offer numerous advantages in the manufacture of nonwoven fabrics, has been developed jointly by Curlator Corp., East Rochester, N. Y., and Celanese Fibers Co., a division of Celanese Corp. of America, New York City.

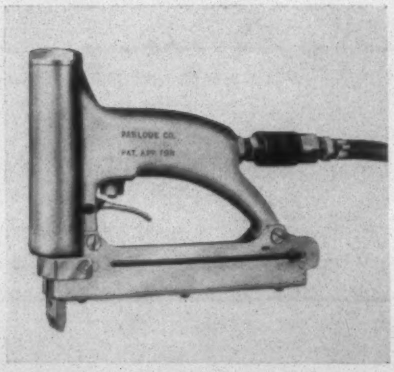
The new saturator is said to make possible the rapid, uniform saturation of nonwoven webs, without drafting or distortion, and to provide flexibility and ease of operation not encountered in existing equipment. The machine can be used in the production of a wide range of nonwoven fabrics, filters and related products, the companies report.

Called the Rando-Bonder, the machine was built by Curlator and incorporates design principles that originated with Celanese. The first unit has been tested at Celanese laboratories and was shipped early this year to a customer who will produce a high quality bonded structure of Celanese acetate fibers.

The Rando-Bonder makes use of two stainless steel endless wire screens so arranged that the bottom screen gives complete support to the web, while the top screen compresses and holds the batting in place during the web conditioning and saturation process.

(Request Item No. H-1)

Pneumatic Stapler



Signode Steel Strapping Co., Chicago, Ill., has announced the development of the new Paslode Bantam pneumatic stapler. The Bantam is said to contain all the speed and drive of the larger Paslode staplers. The Bantam is shorter in height by 3/8" and lighter by 1/2 to 3/4 lb. than its larger PR brother. It is described as a well-balanced, hand-fitting unit which reduces operator fatigue.

The unit contains the Paslode high-speed nylon piston for fast, recoiless action and improved work quality. A light touch of the trigger is said to drive the staple home from any angle.

Costly downtime and production line delays are said to be greatly reduced with the jet-drive air return which eliminates parts failures, extends the life of the tool, and assures positive action and quality stapling. The new Bantam takes both standard and wide crown staples, with leg lengths of 3/16", 1/4" and 3/8".

(Request Item No. H-2)

Upholstery Nylon

A new textured continuous filament nylon yarn has been introduced by the Du Pont Co. to meet increasing demands of weavers for more versatility in the styling of frieze fabrics.

Called Antron 24 nylon, the new upholstery yarn is a distinctive type of the new Antron multifilament tri-lobal nylon introduced several months ago. In addition to having nylon's well-known features of abrasion resistance, durability, and ease of care, Antron 24 nylon is said to contribute greater covering power and dye depths plus attractive texture and luxurious hand to fabrics made from the new yarn. Antron 24 nylon is the fifth commercial product covered by the tri-lobal cross-section patent issued to Du Pont recently.

Lighter weight and higher performance fabrics can be made from the new yarn because it has greater covering power than regular filament nylon, according to Du Pont.

Current production is in 1300 denier and is in limited supply; however, availability will soon be increased, the company reports. A strong and coordinated trade and consumer campaign will be initiated to support the new product. Supplementary to the campaign, a streamer program for products meeting quality standards will be provided. Furniture manufacturers will be furnished streamers for fabrics of 100% Antron 24 nylon pile which meet the quality standards established by Du Pont.

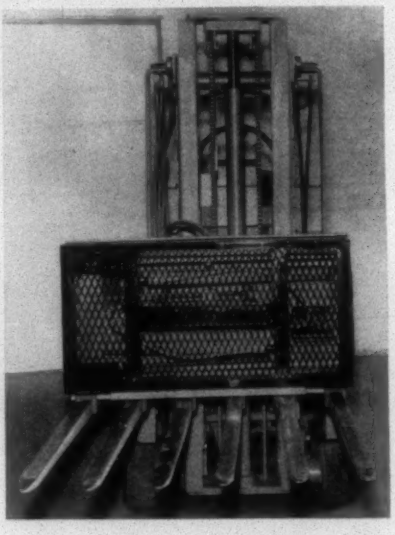
(Request Item No. H-3)

Nonionic Softener

Nopco Chemical Co., Newark, N. J., has announced production of a new nonionic softener and napping aid, Nopcotex NP-25. The product is recommended for use on cotton and synthetic fabrics. As a pure finish it is said to have excellent resistance to yellowing. It also functions as a lubricant, aiding in the cutting and sewing operations.

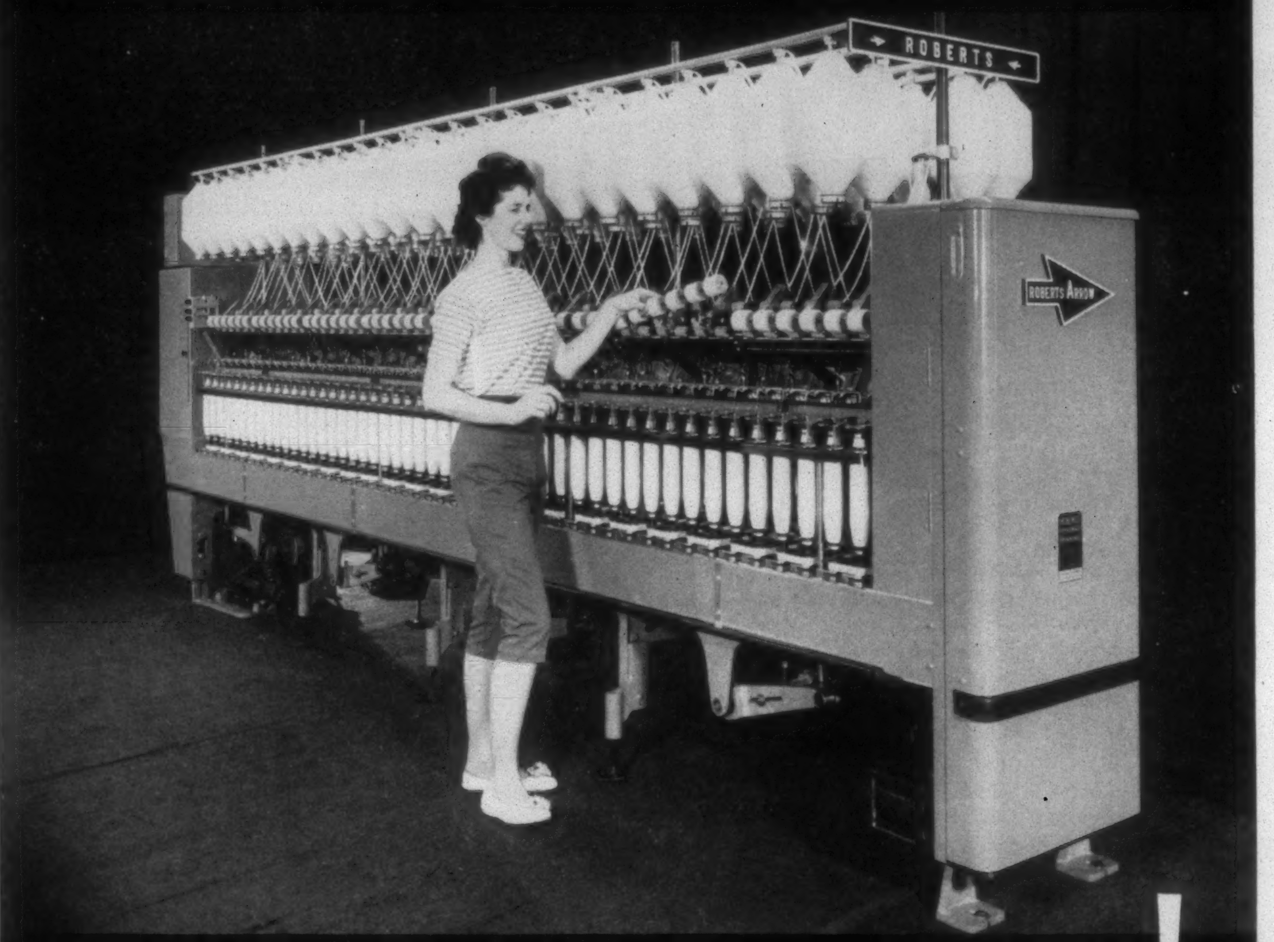
(Request Item No. H-4)

Push-Off Device For Fork Trucks



A push-off device with side shifter and multiple forks has been developed by Lewis & Shepard Products Inc., Watertown, Mass., for establishments using a take-it or leave-it pallet system. This is the system whereby unit loads are handled in process and placed in storage on pallets but are shipped without pallets. The multi-purpose equipment is capable of handling the palletized unit loads in process and

ROBERTS ARROW SPINNING



Spindle Speeds Over 13,000!

One of the most frequent questions asked today concerns high spindle speeds. The answer comes from many of the 850 Roberts Arrow Spinning Frames running in leading mills since 1956. Three examples are shown at the right.

The new and refined Arrow compares advantageously with all other all-ball-bearing frames and greatly outperforms all conventional and standard-type spinning frames. The Arrow offers the greatest dollar-for-dollar-value against any other make of frame in dependable performance, lowest initial cost, and maintenance-free operation.

Arrow Spinning is available for either the cotton or the worsted system for natural or man-made fibers or blends.

3 MILLS RUNNING ARROW FRAMES AT 12,300 to 13,200 R.P.M.

- A major sheet manufacturer runs 36's warp yarn with 2" ring at 12,300 r.p.m. spindle speed on 44 Arrow frames.
- A major manufacturer of Dacron-cotton fabrics runs 50's on 66 Arrow frames with a 1-7/8" ring at 13,200 r.p.m. spindle speed.
- A major broadcloth manufacturer using 96 Arrow frames makes 40's with a 1-13/16" ring at 12,800 r.p.m. spindle speed.

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Ideal's Reconditioning Service completely rebuilds worn flyers, spindles, pressers and bolsters to standard specifications. All three work in perfect harmony — no wobbling — no roving jerks — no runovers at top or bottom of the bobbins. Ideal Reconditioning Service gives you thousands of perfect packages for much less than the cost of new flyers.

Ideal Reconditioning Service is in a class by itself because it includes services not available elsewhere. Here is a partial list:

Noses and barrel hubs realigned

Barrel hubs die-swaged full length

Slots regauged

Hollow legs repaired

Worn ends rebuilt and refinished

Pressers blocked with proper curve and balance . . . or replaced

Flyers reblocked

Spindles rebuilt or replaced

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storage and also the non-palletized loads during shipment. During process and in storage the palletized loads are handled in the conventional manner. When loading carriers, the multiple tined forks are slid between the small stringers on the top of the pallet and the load raised off. The load is then moved to the carrier and pushed off the forks.

(Request Item No. H-5)

A-C Textile Motor

Allis-Chalmers Mfg. Co., Milwaukee, Wisc., has redesigned its Type GZQ textile motor so that mill personnel can mount the fan on either end thereby directing air flow in relation to the driven machine.

A protective guard is supplied for use when the fan is on the front end of the motor.

The motor has prelubricated, double-width, single-row ball bearings and is available in a wide range of sizes with 5′ cable and watertight fittings, 5′ of leads and flexible fitting or 4-position conduit box and short leads.

(Request Item No. H-6)

Optical Brightener, Softening Agent

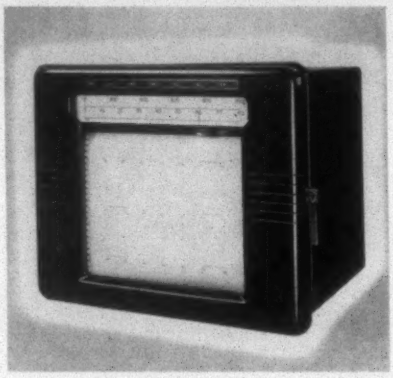
Two new chemical specialties for use in textile finishing are being offered by the chemical division of Sandoz Inc., New York City. The first of these products, Ceranine PN, is a cationic softener for polyacrylonitrile fibers (a broad category which could include Orlon, Dynel, Creslan and Darvan). The second of the new products is Leucophor A, an improved, acid-stable fluorescent whitener for cellulosic fibers.

The softener, Ceranine PN, may be applied to polyacrylic fibers products at any stage in their production. It is said to give a soft, lofty, cashmere-like hand, something particularly desired in the marketing of high bulk acrylic yarns. Other claims for the new softening agent include improvements in the winding, weaving and knitting properties of yarns, as well as in sewing properties. The softener also acts as an anti-static agent on synthetic fibers in general.

The optical whitener, Leucophor A, resembles previous optical whiteners in that it acts to increase the amount of light rays to the visible wavelengths of the spectrum. It is designed for application in acid finishing baths, where old style whiteners have proved much less efficient. Leucophor A optical whitener, according to Sandoz, surpasses previously available brighteners in yield when used in synthetic resin finishing baths with acid catalysts.

(Request Item No. H-7)

Temperature Recorder



A new combination pressure and temperature recorder in its 8000 Series has been developed by the Wheelco Instruments Division of the Barber-Colman Co., Rockford, Ill. The electronic potentiometer recorder is completely self-contained and uses a constant voltage source instead of the conventional standard cell for standardization. The new unit will record one or more points of pressure and up to 23 points of temperature, according to the company.

While the standard unit has a temperature range of 0-800° F., other ranges are available. A variety of pressure ranges are available. The standard recorder has a range 0-10,000 p.s.i.g. Zero and span adjustment are provided for the pressure range of the instrument. This is independent of the temperature range. Bulletin F-9789 describes the new unit.

(Request Item No. H-8)

Premetalized Violet

The addition of National Lanamid Violet 2BL to its expanding line of neutral dyeing premetalized dyes has been announced by the National Aniline Division of Allied Chemical Co., New York City. National Lanamid Violet 2BL is approximately equal in strength, but appreciably bluer than Lanamid Violet RL on both wool and nylon. Its fastness to light and washing and suitability for tippy wool are practically the same as for Lanamid Violet RL. Also, it possesses good solubility and is suitable for low temperature dyeing and for dyeing nylon and wool union.

With the growing popularity of grape wine and helio shades, National Lanamid 2BL will be of considerable interest to woolen and worsted mills, National Aniline reports. National Lanamid 2BL is priced at $4.83 per pound in barrels. Samples are available.

(Request Item No. H-9)

Infrared Heating Equipment

A complete line of infrared heating equipment and infrared ovens for all types of commercial and industrial applications has been introduced by Radcor Inc., Bradner, Ohio.

The equipment in the line consists of components and modular oven sections that can be used singly or constructed in custom form by the customer, and a group of oven units designed and built for basic commercial and industrial operations. These ovens include batch type, vertical, horizontal, portable, tower, coal and ore car thawing types and ovens for use with monorail or floor-type conveyors.

For flexibility in application, the equipment is divided into two series: the L, in which all linear heat sources may be used, and G, which will accommodate all G-30 lamps spaced on 12″ centers. Only two basic parts are required for a Radcor oven in either series—modular sections and frame wireway or frame.

The modulars are sturdy steel housings with double backwall construction. In the L series, they come in two widths, 6″ and 12″, and in four lengths. In the G series, they are available in a 12″ width and in three lengths. In both series, the reflectors, which back up the heat sources, are optically designed to produce correct heat distribution. Several types of reflecting materials are available.

The frame-wireway is a heavy gauge channel which serves for the collection of wires from various sections, as a housing for terminal blocks and supporting framework for the oven, and which can serve as an air chamber for applications where forced air is required to cool terminals and lamp seals. The frame wireway has also been designed to permit contouring to fit various oven requirements.

The oven also comes in a complete

Get BIGGER Packages from your Present Flyers

You can meet today's rising costs "head on" by letting Ideal convert your present flyers to produce larger packages and give you the advantages of these features for much less than the cost of new flyers. In many cases it is possible to increase the weight of your full bobbin by as much as 35%.

Ideal has perfected a practical and comparatively inexpensive way to convert your present flyers to produce larger packages. Ideal can lengthen — spread — or both, all sizes of flyers from 8 x 4 through 12 x 6. This service includes necessary corrections in spindles, pressers, and bolsters. What's more, every flyer is dynamically balanced to run smoothly at ALL possible speeds — not just one. If your flyers are worn, Ideal's Reconditioning Service* will restore them to tip-top condition.

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range of basic shapes and sizes. They are all built to J.I.C. and F.I.A. specifications and are adaptable to any special customer requirement. They are available with or without ventilation systems or electrical control systems. The best sources offered consist of metal-sheath heaters, quartz tubes, quartz tungsten lamps or G-30 tungsten lamps.

(Request Item No. H-10)

New Thermocouples

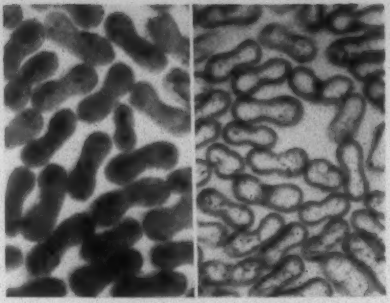
A new line of magnesium oxide packed thermocouples and thermocouple wire has been announced by the Wheelco Instruments Division of Barber-Colman Co., Rockford, Ill. Wheelco MgO thermocouple wire and thermocouple elements are made up of I.S.A. standard grade calibration wire incased in pure magnesium oxide and processed into a chemically clean sheath. Thermocouple elements and assemblies are available in a variety of styles, sizes and lengths. Wheelco Bulletin F-9933 describes these new thermocouples.

(Request Item No. H-11)

Dyes For Acrylics

A new line of dyes for true and modified acrylics that is said to require no expensive retarders in the dye bath has been developed by American Cyanamid Co., Bound Brook, N. J.

Called Calcozine acrylic dyes, the new coloring compounds owe their effectiveness to what is described as a radically different approach to acrylic dyeing. Where older acrylic dyes have a strong affinity for their fiber, necessitating the use of retarders, the attraction is controlled in the new dyes through an increase in the number of positive electrically charged dye sites on the individual dye molecule.



These photomicrographs show the core-dyeing power of American Cyanamid's new Calcozine acrylic dyes as compared with previously available acrylic dyes. The fibers on the left were colored with Calcozine Acrylic Red 3G, which has penetrated to the core of the fiber. The fibers on the right were colored with a product previously considered the best of the dyes available for acrylic fibers.

Five colors make up the initial line, with development work proceeding on others. Most interesting of the five starters, according to American Cyanamid, is Calcozine Acrylic Violet 3R, a rich purple totally unlike any color that dyers and users of acrylic fibers have previously been able to achieve. Other colors in the present product line are blue, red and two shades of yellow.

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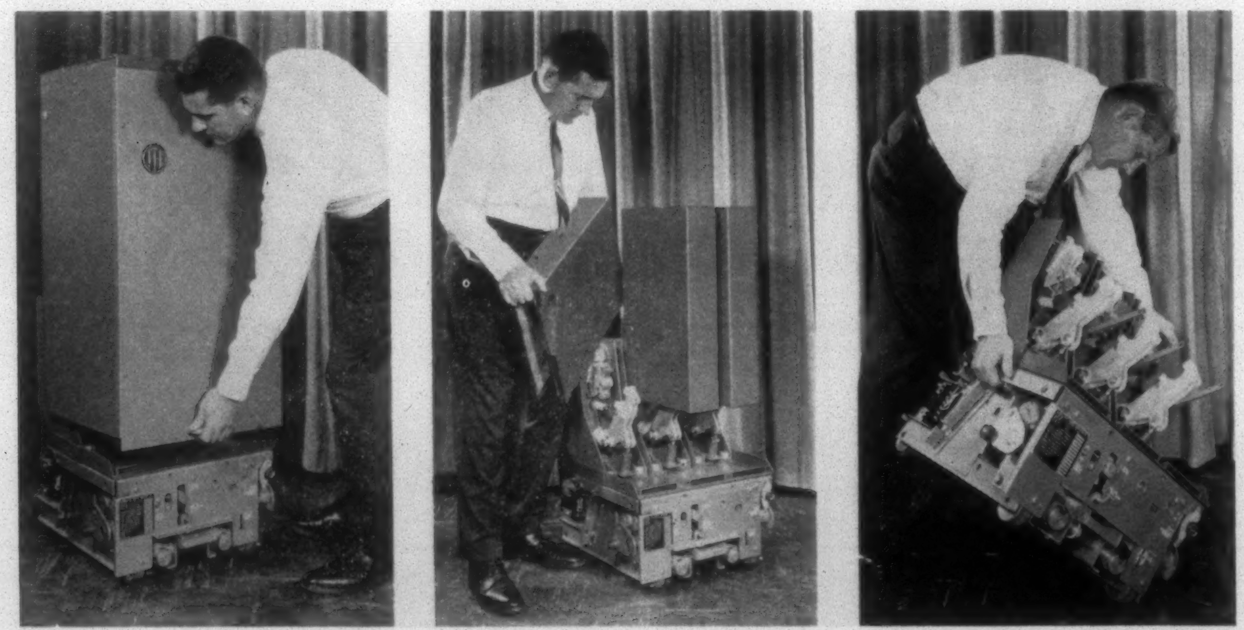

One-man maintenance is claimed for I-T-E's new 4160-volt equipment, provided by compact size, lower weight and low center of gravity. *At left*, interphase barrier is removed by lifting it from base of breaker. *At center*, arc chute is tilted and lifted from pivot point. *At right*, breaker is being tilted over on its side for inspection of all mechanisms.

4160-Volt Circuit Breakers

I-T-E Circuit Breaker Co., Philadelphia, Pa., has developed a new line of 4160-volt circuit breakers and switchgear, which are said to be the first to combine stored-energy closing and ironless blowout in this voltage rating. The units are said to afford faster fault interruptions and faster closing of contacts, and smaller size than any other comparable equipment available today in the 4160-volt field.

Advantages said to be offered by the units include greatly improved fault protection, increased safety for personnel and equipment, higher reliability, easier handling and much simpler installation, maintenance and service.

The types of switchgear construction include the conventional indoor arrangement, and two types of outdoor configurations—standard enclosed and full walk-in.

The 4160-volt breakers and switchgear are used for the switching, control and protection of such equipment as motors, generators, distribution circuits, transformers and a wide range of other electric equipment and machinery.

(Request Item No. H-12)

Because the new colors require only common salt and acetic acid for even exhaust and level dyeings, the need for retarders is eliminated, and more rapid penetration and shorter dye bath cycles are the result.

The wide variance in range of shades and equipment in individual plants and products prevents definite cost saving estimates. However, because of the elimination of retarders, and the level dyeing features, which shorten the dyeing cycle, Cyanamid estimates savings should be substantial. Results on all types of dyeing equipment are said to be brilliant in shade.

Since the new dyes color to the core of the fiber—rather than around the edges as has been the case with previous acrylic coloring compounds—exceptionally fine build-up is reported in the heavier tones, to colors of great richness and bloom. The controlled fiber-dye affinity is also said to make possible an exceptional range of level pastel shades, traditionally the most difficult values to achieve in acrylics, even with heavy use of retarders.

The Calcozine dyes can be stripped back by boiling in a bath containing common salt, providing the dyer with greater control and flexibility. Fastness characteristics and resistance to spotting are also termed excellent.

The new dyes are applicable to such fibers as Orlon 42, Acrilan 16 and Verel by the simplest salt and acetic acid dyeing procedure. Creslan 58, Dacron 64 and Acrilan 3400 can also be dyed with maximum effectiveness, with suitable dyeing assistants or pretreatment.

Extensive use in blends is anticipated, since the new compounds show little tendency to stain cellulosic or animal fibers. Cross-dye and union effects are said to be more easily controlled. Built-in controls are said to eliminate the need for the delicate care and supervision essential to other cationic dyes.

(Request Item No. H-13)

Drying Oven

The Electric Hotpack Co., Philadelphia, Pa., has announced the development of a new textile drying oven that allows individual skeins of material to be inserted, removed and inspected during operation without disturbing other specimens or environmental conditions within the chamber. Eight slots, located in the roof, house covers

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Twister Spindles

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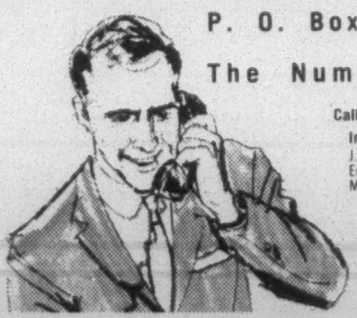

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having an aluminum rod connected to their undersides for draping samples. Temperature range of the units is 35 to 260° C. ± 0.5° C. Controls including an adjustable, automatic thermostat plus Limistat, an over-temperature device that assumes command of heater circuits in the event chamber temperatures exceed the control setting. The exterior is heavy gauge, cold rolled steel, treated against rust, finished in baked enamel. The unit's interior chamber is 24 x 20 x 30″ and is of 18-gauge, polished stainless steel. The oven comes with two removable shelves.

(Request Item No. H-14)

Synthetic Fluids, Lubricants

Commercial availability of a new family of synthetic fluids and lubricants of interest to the textile industry has been announced by The Dow Chemical Co., Midland, Mich.

Dow reports the new product line, trademarked Ambiflo, offers advantages over existing polyalkylene glycol type materials in stability, temperature-viscosity relationships, higher flash point and lower pour point. A special process technique involving polymerization of propylene oxide or of propylene oxide and ethylene oxide with a new type initiator combined with the major advantages of the starting materials produced the superior qualities.

The Ambiflo product series consists of 21 different members, including both water-insoluble and soluble materials.

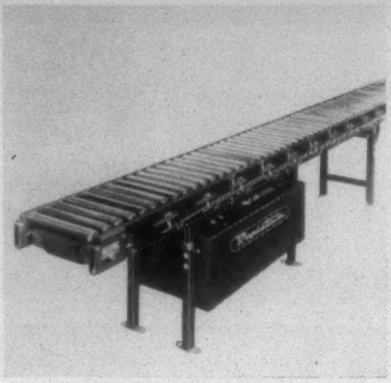
(Request Item No. H-15)

Live Roller Conveyor

Development of a new Live Roller APC adjustable pressure conveyor to supplement its APC wheel-type conveyor line has been announced by The Rapids-Standard Co., Grand Rapids, Mich.

Designated Model 1250, the new live roller conveyor handles larger, wider, heavier and more diversified types of material. These include cans, drums or other chimed bottom containers and wooden crates or pallets with bottom slats and materials with flat rigid surfaces.

A selection of 8 frame widths up to 36″ is available with the Live Roller APC model. Rollers are set high to convey packages wider than the roller sections. Maximum loads of 100 lbs. per running foot are possible on the increased carrying surface of the rollers.



Like the wheel APC conveyor, the Model 1250 Series enables units of material to accumulate to any number with minimal line pressure. When the line is released, the units "singulate" by "peeling off" individually rather than as a continuous line.

Accumulation is achieved through a series of trigger rollers linked to a series of pressure rollers. Trigger rollers are set high and pressure rollers are set below the drive belt. When a unit stops over a trigger roller, depressing it, the connected pressure roller lowers and the drive belt drops away from carrier rollers.

Other features cited by the company for the Live Roller APC model are that individual items can be easily removed or inserted at any point along the line and transfer areas with positive drive can be arranged without special sections or the addition of parts.

(Request Item No. H-16)

Dyeing Auxiliaries

The Arkansas Co., Newark, N. J., has announced the addition of two new products to its group of dyeing auxiliaries with the introduction of Algepon No. 230 and Algepon No. 281.

Algepon No. 230 was developed specifically as a highly efficient retarding agent for dyeing 100% Orlon, using cationic dyes. It produces exexceptionally uniform and level dyeings due to its continuous retarding effect throughout the dyeing cycle. It is particularly applicable for dyeing light and pastel shades.

For optimum results, the company recommends a pre-scouring operation with a nonionic detergent, such as Dergon O M, followed by rinsing. Algepon No. 230 is a liquid cationic product, readily soluble in water, acid in reaction, with a pH from 5.0 to 5.5.

The second new product, Algepon

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- *Control*
- *Management*

SOMETHING

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No. 281, is a dye bath assistant, which is said to be highly effective in eliminating barre marks when dyeing nylon with selected acid dyes.

Used in accordance with the recommended procedure, it does not affect adversely the light fastness of the fabric, according to Arkansas.

Algepon No. 281 is said to be easy to use and economical, requiring only 4% on the weight of the goods for best results. It is a liquid easily dispersed in water and completely stable during the dyeing operation. A modified cationic compound, it has a slight acid reaction, with a pH range of 5.0 to 5.5. Samples are available.

(Request Item No. H-17)

For the Mill Bookshelf

Textile Outlook

The economic, technological, financial and marketing outlook for the textile industry is the subject of a 40-page booklet being distributed by Werner Textile Consultants, New York City, management consulting organization specializing in the textile industry.

The brochure entitled "A Look At The 1960's" contains five papers delivered by nationally known authorities in their respective fields at a seminar for textile executives presented by Werner Textile Consultants in conjunction with the recent American Textile Machinery Exhibition in Atlantic City.

The papers include: "The Economic Outlook for Textiles," by Prof. William H. Miernyk, director, Bureau of Business & Economic Research, Northeastern University, Boston, Mass.; "Vistas of Textile Technology," by Walter Regnery, vice-president, Joanna Cotton Mills Co., Joanna, S. C.; "Financing Equipment Modernization," by Walter M. Kelly, president of Commercial Factors Corp., New York City; "A Marketing Man's Outlook on Machine Modernization," by C. W. Bendigo, director of marketing, Werner Textile Consultants, New York; and "The Textile Merchant Then and Now," by Frank Leslie, vice-president, Burlington Industries Inc., New York.

(Request Item No. H-18)

Brush Catalog

A new catalog of its brushes for industry has been published by M. W. Jenkins' Sons, Cedar Grove, N. J. The catalog gives engineering information on the construction and application of Jenkins' Metlkor brushes. It is designed in convenient file folder forms and multiple copies are available for cross-filing purposes. The catalog features the three basic brush functions of applying, removing and arranging, and illustrates the various types of machine driven brushes that fall into these three categories throughout a variety of industries. Helpful information is provided on the choice of bristle for particular jobs, and a multitude of bristle arrangements are shown. Short case histories are included and illustrated that show how Jenkins' Metlkor brushes have solved problems in the textile industry.

(Request Item No. H-19)

Chemical Products Catalog

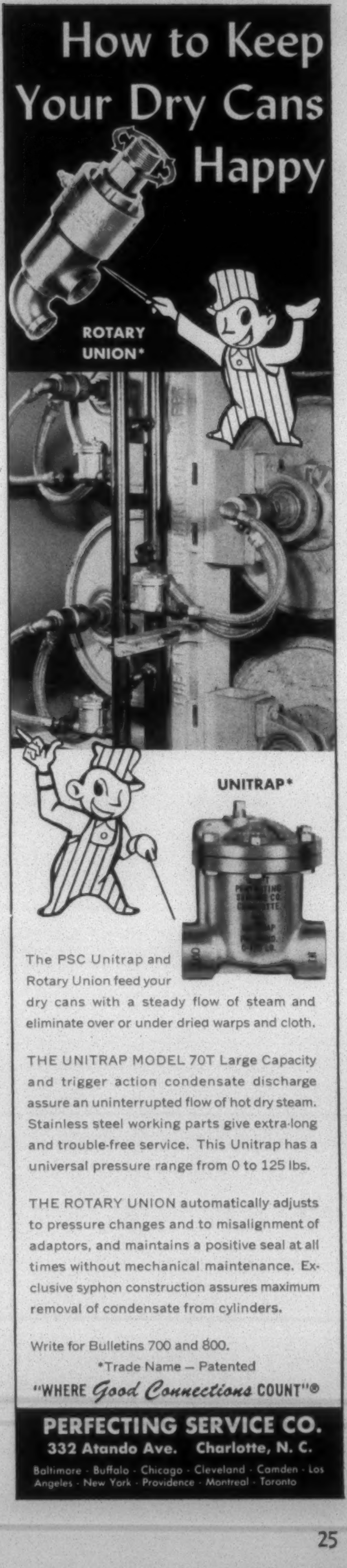
Food Machinery & Chemical Corp. announces the availability of a catalog of all of its chemical products. Entitled "F.M.C. Chemicals," the 36-page, 2-color brochure lists F.M.C. chemicals alphabetically, with physical data and uses. A supplementary listing highlights the major use area of its chemicals. The company's chemical divisions are Becco, Chemicals & Plastics, Chlor-Alkali, Mineral Products and Niagara.

(Request Item No. H-20)

Piecework Payroll

The data processing division of International Business Machines Corp., White Plains, N. Y., has announced the availability of a 36-page application reference manual, Form No. B-20-0070, describing in detail an I.B.M. unit record approach to piecework payrolls. The study is based on a garment manufacturer with several plants and more than 1,000 employees.

Daily there were about 35,000 operation tickets which are summarized into about 3,500 piecework summary cards. The procedure includes the daily preparation of piece tickets, the daily processing of piecework tickets and the


How to Keep Your Dry Cans Happy

ROTARY UNION*

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The PSC Unitrap and Rotary Union feed your dry cans with a steady flow of steam and eliminate over or under dried warps and cloth.

THE UNITRAP MODEL 70T Large Capacity and trigger action condensate discharge assure an uninterrupted flow of hot dry steam. Stainless steel working parts give extra-long and trouble-free service. This Unitrap has a universal pressure range from 0 to 125 lbs.

THE ROTARY UNION automatically adjusts to pressure changes and to misalignment of adaptors, and maintains a positive seal at all times without mechanical maintenance. Exclusive syphon construction assures maximum removal of condensate from cylinders.

Write for Bulletins 700 and 800.

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weekly piecework payroll. The text is augmented with flow charts, sample card forms and report exhibits.

(Request Item No. H-21)

Reactone Dyes

Reactone dyes, recently developed and introduced by the dyestuffs division of Geigy Chemical Corp., Ardsley N. Y., are described in Shade Card No. 1321, now available from the company. Reactone Dyes are said to be an extremely useful range of brilliant reactive colors for padding as well as for printing. Their application to cotton and regenerated cellulose by continuous and semi-continuous processes—such as the heat fixation, one bath steam and pad jig method—is described in detail in the shade card.

The card illustrates the following Geigy Reactone dyes in three depths as well as in a number of combination shades: Brilliant Yellow 4GL 140%; Orange G 125%; Scarlet GL; Brilliant Red BGL; Red 2B 170%; Violet BL; Blue RLD; Blue 2GLD; Turquoise Blue FGL 160%; Navy Blue GRL; Grey GL; and Black RL.

Reactone dyes, for which patents are pending, are said to have all of the following ideal properties which are required for padding applications: solubility, stability, rapid soaping and no tailing.

Excellent solubility is claimed for all the dyes. Some dissolve at concentrations of 100 g/l at 120° F. Others are soluble at 200 g/l or over.

The stability of the Reactones in padding formulations is said to be remarkable. Solutions made alkaline with caustic soda or soda ash remain stable for several weeks without loss of color strength.

In the absence of salts the Reactones have no substantivity for cellulose. Consequently, the washing off of unfixed dye after fixation is extremely simple. Only a brief rinse and soaping are needed to obtain high wet fastness.

The low substantivity of the Reactones is said to allow for long runs without the danger of tailing. Reactone dyes are intermiscible and can be used to produce a very wide range of shades from dull to very bright.

(Request Item No. H-22)

Star will supply your needs for any type paper tube, core, board, or carrier. Three conveniently located plants—each completely equipped with the most modern machinery to make spiral or convolute, cut or coated tubes, assure top quality and prompt service.

Complete research facilities, jointly operated by Star and a leading paper mill, are ready to solve any unusual tube problems.

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Austell, Ga., Phone 948-5338

Cationic Softeners

A new cationic textile softener, Atlas G-3573, for natural and synthetic fibers, is described in a bulletin available from Atlas Powder Co., Wilmington, Del.

Atlas G-3573 is a 100% active, light colored softener having cationic properties. It is said to possess the oustanding characteristics of being readily formulated by the textile chemical compounder as a 25% active fluid dispersion. This fluid disperson can be handled easily by the mill, and using conventional methods, it can be applied to cotton, rayon, the synthetics and wool.

(Request Item No. H-23)

Shelving Catalog

A new 36-page catalog describing its complete line of industrial and commercial steel shelving is now available from Penco Division, Alan Wood Steel Co., Oaks, Pa. This publication, Catalog 2400, contains full information on boltless T-line shelving, angle shelving, tool storage inserts, drawer case units, bin units, custom shelving arrangements and truck shelving. Also included is a section on Penco steel lockers, storage cabinets and bookcase shelving.

Typical applications are discussed to aid in selecting the most suitable type of shelving for an economical, efficient installation. A section of the catalog describes Penco's pre-paint phosphatizing process and other quality control procedures.

Specifications for each type of shelving are listed, as well as tables of dimensions and capacities. Shelving units are illustrated either by photographs or by drawings. Over 130 photographs are included.

(Request Item No. H-24)

Meters, Feeders And Controls

B-I-F Industries, Providence, R. I., has published a new, 8-page general bulletin which provides capsule information about many of its products and systems. Butterfly valves, supervisory control systems, totalizing meters, water and waste treatment equipment and systems, flow meters, process instrumentation, feeders for solids and liquids, and blenders for liquids are covered.

(Request Item No. H-25)

Electric Brakes And Clutches

Warner Electric Brake & Clutch Co., Beloit, Wisc., has published a new complete-line product brochure. Entitled "Tailored Torque," the brochure explains the Warner Electric operating principle, describes several clutch, brake and clutch-brake applications, outlines specific operating advantages, and includes torque ratings and package dimensions for the complete product line.

(Request Item No. H-26)

Fuel Burning Systems

A revised bulletin, No. 1270, describing its packaged fuel burning systems has been issued by Orr & Sembower, Reading, Pa. The publication illustrates some of the latest fuel burning system designs installed in various manufacturing plants.

The company's units are completely packaged, with control cabinet, oil preheater, air compressor, oil pump and burner plenum mounted on welded base. Components can also be assembled in separate packages for remote installation.

The new catalog shows burner designs for oil, gas or combination oil/gas fuels and illustrates the operation of Orr & Sembower's system of stepless modulation throughout the full firing range.

(Request Item No. H-27)

All-Purpose Scour

Descriptive application information about Fantex O & W is now available from its manufacturer, the W. F. Fancourt Co., Philadelphia, Pa. Fantex O & W, a clear viscous-type scour, removes heavy, oily or waxy soil. It is said to be effective on most fibers and fabrics, including cotton and wool.

Because of its low foaming properties, Fantex O & W is desirable on package machines, jigs and Burlington units where foaming is a problem. Its excellent rinsability, speed and lack of odor carryover are other desirable features cited by Fancourt.

Fantex O & W has an initial pH of 9.5 and is an amphoteric type of detergent with a high degree of peptizing properties in an alkaline medium such as caustic soda. For wool, the pH has

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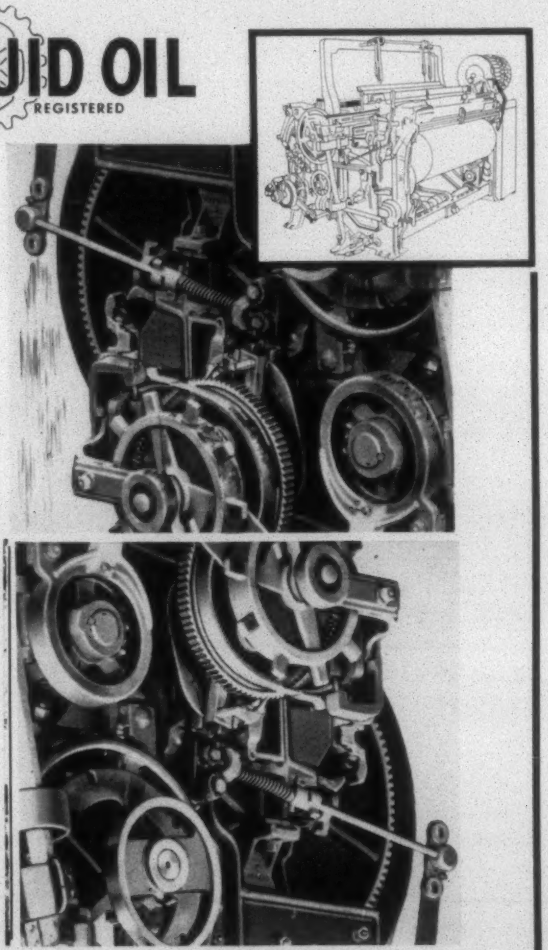

Ordinary Oils
Drip Out

NON-FLUID
OIL
Stays In

NON-FLUID OIL is the lubricant leader in the textile industry because it assures clean loom operation. Ordinary oils drip and spatter and damage goods in process, but NON-FLUID OIL gives constant protection against oil-spot loss by staying in bearings and lubricating efficiently until entirely consumed. Besides providing cleaner and better lubrication, NON-FLUID OIL keeps oil and application costs down by outlasting ordinary oils 3 to 5 times.

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NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture. So-called grease imitations of NON-FLUID OIL often prove dangerous and costly to use.

been adjusted to give maximum scouring without degradation of fiber, and no additives, such as modified soda ash, are required.

Fantex O & W is described as an excellent washing agent for wool sweaters, particularly when such garments are made from garnetted stock and there is a high percentage of grease.

(Request Item No. H-28)

Adjustable Speed Drives

Two new bulletins published by Cleveland Machine Controls Inc., Cleveland, Ohio, describe Sizes 1 and 2 of the company's Series 35 line of electrical adjustable speed drives. The bulletins contain complete specifications, design and construction details, operational, installation and application information. Sketches show a wide variety of system variations.

A unique feature of these drives is their modular design, permitting greater flexibility of application without resorting to "specials." Relay panels, rectifier panels and control panels are individually built and mounted separately in the enclosure.

Bulletin SL-351-460 describes Series 35, Size 1 for electrical drives up to 1/3 h.p. maximum. Bulletin SL-352-5660 describes Series 35, Size 2 for electrical drives up to 3/4 h.p. maximum.

(Request Item No. H-29)

Infrared Bulletin

Fostoria Corp., Huntington Valley, Pa., has published an 8-page technical bulletin No. 59-220, discussing infrared source theories and laws; prediction of quantity and quality of radiation from heated sources; color blindness; and other technical points.

(Request Item No. H-30)

High Pressure Pump

A new bulletin is available describing the high pressure, stainless steel pump recently introduced by Sonic Engineering Corp., Stamford, Conn. The pump will handle most processing liquids and is available in two capacities ranging from 1 to 30 g.p.m., with pressures up to 400 p.s.i.

The bulletin lists some 13 features including: quick disassembly for cleaning; lubricated-for-life sealed bearings; elimination of trapping and pulsing; O-ring seals instead of gaskets, and others. Construction is described in detail and an exploded view of the pump is shown with identification of parts.

(Request Item No. H-31)

Sulfonated Oils

Nopco Chemical Co., Newark, N. J., has published a new booklet, GEN-4, entitled "Nopcosulf Series, Sulfated Oils for Industrial Uses." The Nopcosulf series are true oils but are dispersible in water. They are partially soluble in many hydrocarbons and are said to find extensive use as emulsifiers for insoluble organic compounds. The products of the Nopcosulf series represent a group of vegetable, animal and fish oils which are chemically combined with various percentages of the sulfate radical.

(Request Item No. H-32)

Variable Speed Drives

A new 16-page, 2-color catalog of Zero-Max stepless variable speed drives for fractional horsepower applications is now available from the Zero-Max Co., Minneapolis, Minn.

Typical applications are listed and pictured. Operating features and installation suggestions are accompanied by diagrams and tips on power transmission. Details on all types of units, with or without motor, in the new 400 Series of Zero-Max variable speed drives are included. Charts and diagrams are included to answer many questions on the use of mechanical variable speed.

(Request Item No. H-33)

Water-Resistant Cotton Fabrics

A comprehensive report on research to improve the water resistance of cotton fabrics has been published in booklet form by the U. S. Department of Agriculture. The work reported was done at the Southern Utilization Research and Development Division of U.S.D.A., New Orleans, La. Authors of the five papers which comprise the 62-page report include Charles F. Goldthwait, William G. Sloan, Alton L. Murphy and Edmund M. Buras Jr.

Interest in the production of water-resistant fabrics made from American cotton was stimulated by the emergency conditions existing during World War II. One of the first products of research along these lines was the unlined cotton firehose. Such fabrics have a number of uses, such as tents, wearing apparel, tarpaulins and water containers.

The publication comprises five papers, covering a wide range of subjects pertaining to water resistant fabrics, as well as considerable information of general interest particularly on cotton fabric construction and finishing, and the relationship of fiber and fabric properties.

Several avenues of approach to the production of improved water resistant fabrics were investigated. They include: utilization of the greater swelling capacity of immature cotton fibers, treatment of the yarns before weaving, weaving unusually dense fabrics and studying the effect of each successive step in fabric finishing on air and water resistance. A large number of experimental fabrics were woven and finished.

Among the many topics discussed are the swelling capacities of various types of cotton fibers, the effects of yarn and fabric structure, and of finishing and of various kinds of treatment, such as mercerization. Conventional tests for water resistance and special methods utilized during the studies, such as the orifice and centrifuge tests, receive attention. Air permeability, and the effects of entrapped air on the water resistance of the fabric are taken up, together with a number of other subjects such as capillary systems. Practical implications of the various findings are given. The papers are augmented by numerous statistical tables, graphs and photomicrographs. The authors have included a list of 37 references to basic literature on water resistance of fabrics. Single copies can be obtained by writing to the Southern Utilization Research and Development Division, P. O. Box 19687, New Orleans 19, La.

New Polymers

The American Society for Testing Materials has announced the publication of the Edgar Marburg Lecture, "New Polymers—New Problems," by Herman F. Mark which was presented at the 1959 annual meeting of the society. Dr. Mark discusses current problems in the polymer field and their behavior properties which man attempts to exploit to develop new materials. Copies may be obtained from A.S.T.M., 1916 Race St., Philadelphia 3, Pa., at $1.00 each.

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Get spinning and twisting performance that cannot be topped by any other traveler. Insist on VICTOR ROCKET TRAVELERS. VICTOR quality cannot be matched.

VICTOR men know their business. They select the right Saco-Lowell Ring and Rocket combination to make your frames run better whether the stock is cotton, wool, synthetics or blends.

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Serving The Textile Industry

Terrell Machine Co. Named Benray Agent

The Terrell Machine Co., Charlotte, N. C., has been appointed exclusive sales agent for the fiberglass re-inforced plastics made by Benray Inc. A wide range of products for the textile industry is made by Benray. These include doffing boxes, slasher hoods, slasher ducts, conditioning boxes, and other items where there are corrosion problems. Fiberglass re-inforced plastic slasher ducts by Benray are being used to replace stainless steel where corrosion problems existed.

American Viscose Opens Southeastern Sales Office

American Viscose Corp., Philadelphia, Pa., has opened the first Southeastern district sales office for its new industrial packaging department in Charlotte, N. C., and has named Alfred M. Lynch to the post of district manager. Lynch is headquartered in the company's fibers division sales office in Charlotte.

The first product of the new industrial packaging department is Avistrap cord strapping, a high-tenacity rayon cord for industrial packaging.

The new Charlotte office is the sixth district sales office opened by the company's industrial packaging department since Avistrap was first announced early in May 1960.

The Dixon Corp. Moving Textile Operations South

The Dixon Corp., Bristol, R. I., reports it has sold its Rhode Island facilities and is planning to move all textile operations to the South within the next two years. This move will result eventually in the consolidation of Dixon's machinery and equipment now housed in plants in Bristol and Charlotte, N. C., into a single unit for the manufacture of spinning drafting changeovers, roll stands, steel rolls, gearing, top rolls and saddles—as well as their recently introduced line of Draftex cots and aprons. Tentative plans call for erection of a new plant in the Carolinas to serve as centralized headquarters for all sales, engineering, service and manufacturing functions.

Dixon plans to maintain a sales office in Rhode Island to serve New England and Canadian customers who use spinning drafting equipment. It will also continue its plastics division in Rhode Island.

Lindly & Co. Forecasts Rise In Sales, Profits

Sales and earnings of Lindly & Co., Mineola, N. Y., manufacturer of electronics process and quality control equipment, will gain in the first six months of 1960 and probably result in record figures for any comparable period in the company's history, according to Howard C. Lindeman, president.

Net sales for the first quarter were 29% higher than the corresponding 1959 quarter, and indications are this trend will continue, the company reports.

It is estimated that company sales for the year will be approximately $600,000 or 35% above the $459,000 reported in 1959. Both foreign and domestic sales to the textile industry are holding up well, the company reports.

The Draper Corp. Plans Marion, S. C., Parts Plant

The Draper Corp., Hopedale, Mass., has announced plans to build a new parts plant in Marion, S. C., to serve the Southern textile industry.

The facility will be known as Marion Industries. Initial employment will total 30 persons, but is expected to be sharply increased later.

International Division Of Saco-Lowell Moved South

The international division of Saco-Lowell Shops has been moved from Boston to Easley, S. C. Improved coordination between the international division and the manufacturing plants in the Carolinas, which will result in improved service to customers, was given as the reason for the move. The Saco-Lowell Textile Machinery Division at Easley and the Saco-Lowell gear and machine division at Sanford and Jonesboro, N. C., manufacture the equipment sold throughout the world by the international division.

Perfecting Service Co. Celebrates 10th Anniversary

Perfecting Service Co. is celebrating its tenth anniversary as a producer of precision products. The company's first patented product was the rotary union, a revolving mechanical seal for rotating machinery and equipment which is used extensively in textiles and other process industries.

Today the company carries on a widely diversified operation which includes the production of such varied items as component parts for airplane bomb releases, a hydraulic submarine periscope raising device, instrument gears for a computing mechanism and a variety of quick connect couplings.

The company presently employs some 237 persons as compared with 27 at the start of operations. Its annual payroll is $1.4 million.

Edgecomb Steel Co. Expands Charlotte, N. C., Facilities

The Edgecomb Steel Co. has begun the construction of a 20,000-square-foot addition to its plant in Charlotte, N. C. The new facility is expected to be ready for receipt of new inventories about September 15. This is the fourth addition to the plant since its opening in 1948.

T. B. Wood's Sons Erects Southeastern Warehouse

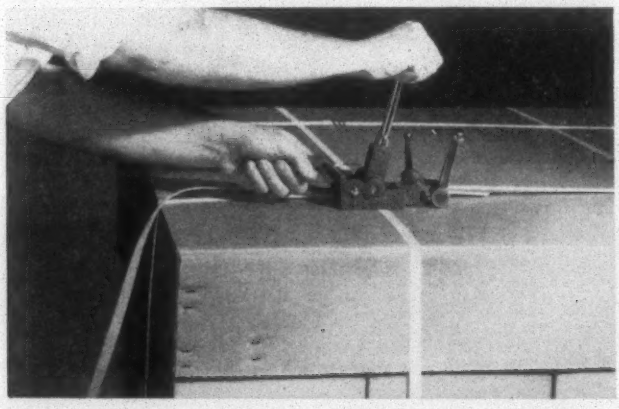
T. B. Wood's Sons Co., Chambersburg, Pa., will soon move into its new Southeastern regional warehouse and office building at 1736 De Foor Place, N.W., Atlanta. This new warehouse will expedite deliveries to the states of Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Tennessee and fringe areas in neighboring states.

The building is of one-story construction, masonry and steel through-

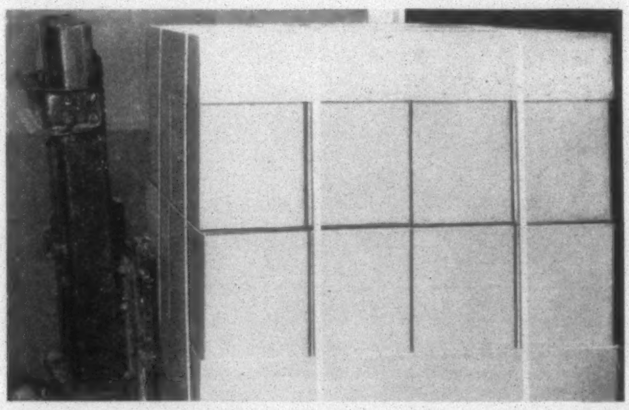
NEW SAVINGS

1 **New strapping material**—new low cost. Made of super-strong Avisco® rayon, AVISTRAP cord strapping costs less than metal strapping and reinforced tapes of comparable strength, offers many more important advantages.

2 **Easy handling, lightweight.** All coils of AVISTRAP cord strapping weigh 21 lbs. Yardage equals 100 lb. coil of comparable width steel strapping. Simple, low-cost dispensers permit replacement of coils in a few seconds.



3 **Low cost per package.** You invest less per package with AVISTRAP because its initial cost is low. In many instances, corner protectors can be eliminated. AVISTRAP is also extremely safe to handle, won't injure personnel.



4 **Saves on shipping costs.** AVISTRAP adds little weight to packages—as little as one-seventh the weight of steel strapping. Result: substantial savings for shippers. Also important, AVISTRAP won't damage merchandise.

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City ____________________ State ____________________ out. It embraces a total of 6,300 square feet, including some 600 square feet for office space. Complete stocks of Wood's products for mechanical power transmission will be carried, including variable-speed sheaves, belts, pulleys, drives, interchangeable bushings, etc.

The new warehouse will be under the direction of Joe Seawell Jr., regional sales manager, Southeast region. Robert E. Belle Isle will act as warehouse supervisor.

Chemstrand Sales, Earnings Increase In Second Quarter

Sales on a consolidated basis for The Chemstrand Corp., New York City, for the second quarter of 1960 amounted to $52.8 million, compared with sales of $52 million for the second quarter of 1959.

Consolidated net income for the second quarter was $7.1 million, compared with net income of $7.2 million for the second quarter of 1959.

Consolidated sales and consolidated net earnings for the first six months of 1960 were $103.1 million and $13.4 million, respectively. These compared with sales of $106.2 million and consolidated net income of $14.8 million for the first half of 1959.

Allied Chemical To Locate Apparel Nylon Plant In S. C.

Plans to locate a new fine-denier Caprolan nylon yarn plant at Irmo, S. C,. have been announced by the Allied Chemical Corp. Construction of the multi-million dollar plant on the 500-acre Irmo site about ten miles from Columbia has begun. The plant, to be operated by the company's National Aniline Division, will be Allied's first major manufacturing facility in South Carolina. It will be completed late in 1961 and will increase the company's over-all nylon fiber capacity to more than 80 million pounds per year.

Announcement of the new plant construction follows Allied Chemical's recent decision to enter the apparel nylon field through an arrangement with the fiber-producing firm of Snia Viscosa, SPA, Milan, Italy. Snia Viscosa will furnish Allied Chemical with technical assistance and certain manufacturing equipment for the Irmo plant.

Allied's fine denier Caprolan is expected to find a market in apparel, home furnishings fabrics and other textile applications. Medium and heavy Caprolan nylon yarns, 140 denier and over, are produced at Chesterfield, Va., and are used in carpets, upholstery and industrial applications. Allied's Golden Caprolan, a heat-stable, high-tenacity nylon yarn, is used for tire cord and marine cordage. Plans to triple the existing capacity for Golden Caprolan nylon are underway.

Completion of the South Carolina fine-denier plant, which will employ about 800 people, will enable Allied to market a full range of nylon yarns.

Extensive Ad Campaign Planned For Sanforized-Plus

Starting in August issues of nationally-circulated magazines and big-city dailies, the Sanforized Division of Cluett, Peabody & Co. will use a series of full-page advertisements to tell consumers that in stores from coast to coast they can now buy wash-and-wear garments with the new Sanforized-Plus trademark label which assures good wash-and-wear performance.

The late Summer and Fall introductory advertising program for the Sanforized-Plus trademark includes full-pages in *Life, New Yorker, Sports Illustrated, Glamour, New York Times Magazine* and *Seventeen.* Also featured are advertisements in the daily *New York Times, New York Herald Tribune, Chicago Tribune, Los Angeles Times* and *Los Angeles Herald-Express.*

Seventeen leading fabric producers have been licensed to use the Sanforized-Plus trademark on their wash-and-wear fabrics that meet the five test requirements. A quality control program includes continuous testing by licensee personnel, regular check-testing by Sanforized field engineers, and over-testing at the Sanforized Standards Testing Laboratory in Troy, N. Y.

Wash-and-wear garments with the Sanforized-Plus trademark label are presently on the market. The variety of garments includes slacks, shirts, jackets and dresses.

Felters Co. Announces Major Expansion Plans

The Felters Co. of Boston has purchased the Millbury, Mass., plant of Watson-Williams Mfg. Co., in an expansion move to provide warehouse space and improve service to customers. The Watson-Williams plant, adjacent to the main Felters plant, is in the process of being vacated by its present owners, who are moving all operations to Pinebluff, N. C., on or about August 1.

AviSun Corp. To Construct Polyethylene Plant in Del.

AviSun Corp. has selected New Castle, Del., as the site of its new multi-million pound-per-year polypropylene plant. The new plant will be adjacent to AviSun's present ten-million pound-per-year film plant and its fiber plant on a 214-acre industrial site. Polypropylene from the new plant will provide the chief raw material for these film and fiber plants.

The engineering contract for the proposed 100 million pound-per-year plant was recently awarded to Bechtel Corp. of San Francisco. AviSun also has an option to purchase facilities at Port Reading, N. J., which could provide an additional 50 million pounds-per-year of polymer capacity.

Saco-Lowell Shops Reports Improved Profit Position

Saco-Lowell shops reports a net income of $282,645 on operating income of $815,829 for the second quarter of fiscal 1960. This compares with a net loss of $971,562 on an operating loss of $603,207 in the same quarter of 1959. Earnings for the half-year ended May 31 totalled $509,033 as compared to a net loss of $2.1 million in the first half of 1959.

The company also reports that Food Machinery & Chemical Co., San Jose, Calif., has withdrawn its offer to purchase a majority of Saco-Lowell stock. The proposed transaction would have involved more than $13 million. Maremount Automotive Products Inc., owner of some 34% of Saco-Lowell Shops, has issued an offer of $25 a share for 90,000 shares of Saco-Lowell stock. The additional shares would give Maremont control of a majority of outstanding shares.

Railway Express Reduces Textile Rates Up To 60%

Nationwide express rate reductions of up to 60% on shipments of textile and related dry goods products, effective July 5, have been announced by Railway Express Agency, New York City.

Reductions of 60% in the 100-lb. express rates, as well as substantial rate cuts on shipments in weight brackets less than 100 lbs., apply to automobile seat covers, piece goods and such dry goods items as wash cloths, towels, tablecloths, slipcovers, sheets, pillow cases and covers, napkins, drapes, dish cloths, curtains, cloth trimmings, blankets, bedspreads and awnings.

Applicable between all express stations in the U. S., except Alaska and Hawaii, the commodity tariff provides for graduate rates, pound by pound, from 1 to 31 pounds; rates for shipments within two weight brackets, 32 to 75 and 75 to 99 pounds; and the 100-lb. rate.

Akron Spool & Mfg. Co. Holds Open House In July

The Akron Spool & Mfg. Co., High Point, N. C., held open house during the month of July. Akron invited members of the industry to visit its newly enlarged plant and observe the production of its wood and fibre spools.

Barreled Sunlight Co. Closes Providence Plant

Manufacturing operations of the Barreled Sunlight Co. at Providence, R. I., will be discontinued, the company reports. The action affects about 50 production workers. The company, a wholly-owned subsidiary of Pittsburgh Glass Co. since 1955, will continue to maintain its sales organization in Providence. The company will also continue to market its full line of products, which will be produced at various facilities of the parent organization.

Crown Chemical Purchases The Cravenette Co. U.S.A.

Crown Chemical Corp. of Providence, R. I., has purchased Cravenette Co. U.S.A. of Hackensack, N. J. Cravenette, which produces a full line of water repellents, will continue as a wholly-owned subsidiary of Crown. Robert Hunzinger will continue as president of the subsidiary. Specialty water repellents produced by Crown will be promoted and sold through Cravenette.

International Salt Dedicates Pennsylvania Headquarters

The International Salt Co., manufacturer of Sterling Salt products, recently dedicated its new $2 million administrative headquarters at Clarks Summit, Pa.

International Salt's new administrative headquarters building is set on a 184-acre country site seven miles from Scranton, Pa., home of the company since its founding in 1901. Construction of the building, which houses the company's 200 top officials and administrative personnel, was begun early in 1958 and was completed last November.

Southeastern Headquarters Opened By The Foxboro Co.

In order to meet the increased instrument needs of process industries in the Southeast, The Foxboro Co. has moved its seven-state sales and service headquarters to a newly constructed building at 3393 Malone Drive, in Chamblee, Ga., a suburb of Atlanta.

In addition to housing the industrial instrument company's regional headquarters, the new building provides offices for the staff of the Atlanta branch and a complete service and repair shop for the general area.

The regional office co-ordinates the company's sales and service facilities in ten major Southern cities.

M & H Packaging Expands, Becomes Dixie Packaging

M & H Packaging Co., Greenville, S. C., converter of polyethylene and cellophane, has announced the expansion of its operations and its organization into a new corporation to be named Dixie Packaging Inc.

Presently manufacturing polyethylene and cellophane products, Dixie Packaging is adding to its services for the industries of the South a complete label manufacturing facility.

(Standing) Heffner, Getchell, Martin, Goheen, DuPre *(Seated)* Hoffpauir, Lyons, Smith, Cone, Cheatham, Fisher

GATHERED FOR A GROUP DISCUSSION during a recent conference on the mechanical processing of cotton held at the U. S. Department of Agriculture's Southern Utilization Research and Development Division in New Orleans, La., are C. L. Hoffpauir, assistant director of the division; Joseph J. Lyons, president, central manufacturing division, M. Lowenstein & Sons, Anderson, S. C.; Leonard Smith, director of utilization research, National Cotton Council, Washington; Clarence N. Cone, vice-president, Cone Mills, Greensboro, N. C.; R. J. Cheatham, chief of the cotton mechanical laboratory, S.U.; C. H. Fisher, director of S.U.; Lawrence L. Heffner, cotton utilization specialist, North Carolina State College; Nelson F. Getchell, National Cotton Council, Washington; William J. Martin, cotton utilization specialist, Federal Extension Service, Clemson; G. E. Goheen, assistant director of the Southern Division; and A. Mason DuPre' Jr., assistant to the administrator of the Agricultural Research Service, U.S.D.A., Washington. The occasion was a conference of the industry advisers — Messrs. Cone and Lyons—with the cotton mechanical and engineering development laboratories of the Southern Division. A third member of the group, Louis L. Jones Jr., president, Canton Cotton Mills, Canton, Ga., was unable to attend.

FREE SPINNERS

to operate more sides

with TYPE M

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CHARLOTTE, N. C.

textile bulletin

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The 1960 Cotton Research Clinic

HIGHLIGHTS FROM THE NATIONAL COTTON COUNCIL'S ANNUAL WORKSHOP FOR COTTON TEXTILE RESEARCHERS

REPORTS on cotton fiber testing instrument and processing machinery improvements were features of the annual Cotton Research Clinic held May 31-June 2 at the Grove Park Inn, Asheville, N. C., and sponsored by the National Cotton Council.

Measurement and control of short fibers was given special emphasis at the meeting. Dr. Laura T. Hall, The Kendall Co., Charlotte, N. C., presented a mill evaluation of the new Digital Fibrograph and Fibrosampler. The two devices make possible the rapid preparation and photo-electric scanning of a cotton sample for determination of fiber length distribution. Hall reports the instrument sufficiently accurate and rapid for highly important routine fiber length analyses.

Other presentations dealing with the new Digital Fibrograph were made by C. J. Craven, University of Tennessee, Knoxville, who provided background information on the development of the instrument; and by Lindsay Dexter, Pepperell Mfg. Co., Boston, Mass., who described mill use of the new instrument for control of short fiber percentages in the raw stock.

A new cotton trashmeter was described by Harvin R. Smith, U.S.D.A., Washington, D. C. The particle size and amount of trash contained in cotton samples is determined by the instrument using an electric optical device.

Clinic speakers discussing short fibers included: John D. Tallant, S.R.R.L., New Orleans, La., on the influence of short fibers on processing and quality; Ludwig Rebenfeld, Textile Research Institute, Princeton, N. J., on the properties of short fibers; and Hugh M. Brown, research consultant, Clemson, S. C., on short fiber content measurement using a fractionation method.

New Machinery Developments

New developments in processing machinery were discussed during the morning session of the second day of the meeting. Paul B. West, Saco-Lowell Research Center, Clemson, S. C., described an automatic draft control system for drawing. The system is designed to correct non-uniformity of sliver using electronic controls. Carl D. Brandt, Whitin Machine Works, Whitinsville, Mass., spoke on a newly developed roving frame which reportedly can double present production speeds and, at the same time, produce better roving. Successful mill tests using a new spinning top roll suspension system were reported on by Burrell C. Cole, Cole Engineering Co., Columbus, Ga. Cole said the spinning system provides greater uniformity and strength in the yarn and improves frame efficiency.

New developments in roving package winding were discussed by G. G. Fornes, Institute of Textile Technology, Charlottesville, Va. The influence of fabric construction on properties of resin treated fabrics was discussed during the closing session of the meeting. Tear strength was discussed by E. James Stavrakas, Fabric Research Laboratories, Dedham, Mass.; crease recovery and tensile strength were discussed by Richard L. Arceneaux, S.R.R.L. A 13-year history of the influence of various cotton fiber properties on processing and quality, by Franklin E. Newton, U.S.D.A., was also given during the last session.

General chairman of the meeting was M. Earl Heard, West Point (Ga.) Mfg. Co. Technical session chairmen were B. F. Tipton, Woodside Mills, Greenville, S. C.; Ashley B. Roberts, China Grove (N. C.) Cotton Mills; Richard Tuttle, Fieldcrest Mills, Spray, N. C.; and Werner Pels, National Cotton Council.

Mill Appraisal Of Digital Fibrograph And Fibrosampler

By **LAURA T. HALL**
The Kendall Co.

THE distribution of fiber length is a basic property of cotton upon which mill performance and product quality are critically dependent. The length distribution inherent to a particular variety of cotton is of importance itself. The changes in this length distribution which occur as a consequence of fiber breakage in cleaning operations reduce spinning quality. Mechanical harvesting associated with elaborate cleaning operations at the gin together with requirements for higher production rates and lower costs at both gin and mill have made fiber breakage a matter of utmost concern to the industry today.

The growing importance of length distribution has culminated in a number of efforts to devise better and quicker methods of distribution determination. The one which has shown greatest progress is the development of the Digital Fibrograph.

With a background of experience with the Servo Fibrograph we had a normal interest in the new Digital Fibrograph. This interest was heightened when shortly later the Fibrosampler was made available.

Our objectives in working with the Digital Fibrograph-Fibrosampler combination were (restricted to $1\frac{1}{32}$ and $1\frac{1}{16}$-inch cottons of interest to Kendall):

(1) To ascertain to what extent the limitations of the Servo instrument might be eliminated or minimized.

(2) To appraise and compare the Digital-Fibrosampler results with those obtained with the Servo hand combing and the Suter-Webb sorter array techniques for precision, accuracy and reproducibility.

Digital Fibrograph-Fibrosampler

The Fibrosampler is a device which rapidly prepares beards for use on the Digital Fibrograph and eliminates most of the personal element of hand combing. A portion of a classer's sample is used. It is important that the surface of the sample be representative of the bulk of fibers, and it is essential that a "fresh face" be presented to the comb each time a beard is prepared. The previous handling of the sample is therefore important.

The Digital instrument can be thought of as the basic Fibrograph changed to "read-out" length and amount of fiber on counters. This read-out feature eliminates the drawing of tangents and the associated measurements. The Digital instrument positions the beard automatically at preset locations. Several length co-ordinates have been studied in this appraisal including the 50% and 3.1% span lengths.

Result Comparison

A limited amount of data suffice to show a good correlation of D.F.S. 3.1% span length and upper quartile from the Suter-Webb Sorter. The correlation coefficient, for this data, is 0.98 with a standard error of 0.02-inch. The 3.1% span length is about 0.10-inch less than the upper quartile length in the range studied.

There is excellent correlation between the short fibers measured by the array and the D.F.S. techniques. The correlation coefficient is 0.94 with a standard error of 2.3% short fibers. An illustration of the differences in level of per cent short fibers between arrays made by three laboratories compared to D.F.S. results from one operator shows a 0.80 coefficient of correlation. For each laboratory there appears to be a different slope. The per cent short fibers by the D.F.S. technique is roughly 5% less than by the array method.

Pels, Roberts, Heard, Tipton

Chairmen of the National Cotton Council's eleventh annual research clinic were Werner Pels, of the council's Washington office; Ashley Roberts, superintendent, China Grove (N. C.) Cotton Mills; General Chairman Earl Heard, West Point (Ga.) Mfg. Co.; and B. F. Tipton, vice-president, Woodside Mills, Greenville, S. C.

From the foregoing data the conclusion is reached that the D.F.S. technique measures parameters of length, such that with only an adjustment of magnitude, are the same as those obtained by the array method.

With commercial cottons of today, for a single staple length the percentage of short fibers ranges from very low to high and the range in upper half mean length is nearly twice that of a few years ago. Because of these greater ranges a single parameter no longer adequately describes the length distribution for spinning value.

We have found that the 3.1% span length and the per cent short fibers are most useful instrument length parameters in evaluating spinnability. The choice of the parameters was based on cottons selected by our cotton buying office and on the mill performance of carefully selected bales.

Summary

The present work has, of necessity, been devoted primarily to an evaluation of quantities already known to be useful, i.e., the per cent fibers ½-inch and less in length and the 3.1% span length. This appraisal leads us to the conclusion that the Digital Fibrograph-Fibrosampler combination provides a very practical, useful, and in view of the character of commercial cottons today, timely laboratory test.

More specifically, the precision and reproducibility is fully adequate for routine appraisal of cotton quality. The time required for testing is short enough to be useful in a practical sense.

The Digital Fibrograph does not, however, restrict the user to two or three arbitrary lengths in the fiber distribution. In view of the relative ease of obtaining large quantities of data with the D.F.S. combination, this system would appear to hold further unexplored potentials throughout the industry.

Span Length As A Fiber Length Criterion

By C. J. CRAVEN
University of Tennessee

THE length property of the fibers in a fiber population is an important property of a textile material. The widely accepted usage of staple length and the substantial premiums paid for cotton based on staple length are evidence that a single length criterion can represent the effective length potential of a fiber population with its wide range of individual lengths. This indicates that the rule of length is fundamental, simple and universally applicable throughout textiles.

Length is a very basic quantity throughout the physical world, being merely the distance between two points. In the field of textiles, the long thin fiber capable of transmitting tension but not compression, torsion or bending is the basic unit. Combining these two concepts, the importance of length in textiles depends upon the effectiveness of a textile in transmitting tension between two points. Stating it in terms of length, the effective length is that which will be spanned or bridged by a given proportion of the fibers.

A primary purpose of many textile structures is to resist tension as well as offer only slight resistance to compression, torsion or bending stresses. Where the hand, drape or similar characteristics are factors, however, the weak compression, torsion and bending stresses are important.

Various workers have investigated the role of length in fibers for producing yarn strength. In simple terms these analyses give the proportion of fibers that bridge or span the fracture zone, and hence transmit tension across the fracture zone, as a function of average fiber length and other pertinent physical properties.

A key to yarn strength is the effectiveness of a fiber population to span the fracture zone or critical length. This critical length in turn depends upon the amount of twist, specific area, coefficient of friction and other fiber properties. However, for a given set of fiber properties other than length, yarn strength depends upon the proportion of fibers that span the critical length.

The ratio of the critical length to the average length determines the efficiency with which a fiber population spans the fracture zone. Thus a span length and the average fiber length would seem to be the most meaningful length criteria for predicting yarn strength potentiality.

In order to see more clearly the meaning of span length, it may be helpful to examine the case of an ideal fiber population in which all of the fibers are 0.75 inches long (Fig. 1). In this case the 2.5% span length is 0.73 inches and the 67% span length is 0.25 inches. The machinery in the mill would be set the same as for a cotton of 0.73-inch staple length. When the finished yarn is given a twist such that the fracture zone is 0.25-inch, two-thirds of the fibers in the cross section will break upon yarn rupture. The yarn strength will be the same as any yarn in which two-thirds of the fibers rupture providing other conditions are equivalent. Although specific values have been given to make the illustration concrete, these values can only be approximations to the true optimum values that prevail in any mill.

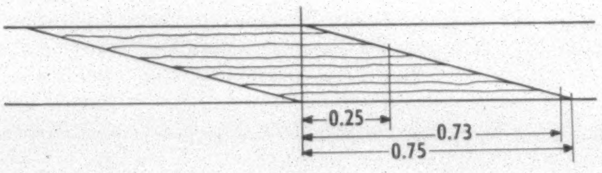


Fig. 1

Conclusions

Length of fibers is important in the textile industry for two different reasons. In disentangling, orienting and straightening the fibers starting from the raw state it is important to know the shortest distance to which the machines can be adjusted so that few if any fibers are broken. The staple length or the distance that only 2.5% of the fibers in a roving cross section will span would seem to be a good criterion.

When, however, one is interested in product strength, one must ask how effectively the fibers bridge or span the fracture zone. This is determined primarily by the average length of the fibers or equally well by the length that a large percentage such as 67% of the fibers will span. In both cases the length is a distance the fibers will span or bridge. In the first case it is that distance which only a small fraction will span to prevent breakage, whereas in the second case it is that length which about two-thirds of the fibers will span and will contribute their ultimate or breaking strength.

There are, therefore, two important span lengths needed to characterize the length potential of fiber population. Although these lengths can be expressed in terms of other lengths now being reported, it would seem to simplify length considerations to make fiber length measurements directly in terms of span length. The two span lengths recommended are the 2.5% span length and the 67% span length.

Mill Control Of Short Fiber Percentage For Improved Spinning Performance

By LINDSAY DEXTER
Pepperell Mfg. Co.

THE mill, upon whose experience most of the data to be presented are based, started having trouble as soon as the 1958 Memphis cottons hit the spinning room. As the percentage of '58 cotton in the mix increased, ends-down in spinning likewise increased spasmodically. In early 1959 the situation became desperate and every possible means for remedying it was explored. Opening room feeders were modified for better blending of cotton; speeds and drafts were reduced; twist gears, roll settings and travelers were changed, all without effect.

None of the usual fiber measurements gave any clue to the trouble. Even Suter-Webb arrays for coefficient of variation failed to show a significant change that could be related to the violent fluctuations in ends-down.

Finally it was found that the increase in ends-down was due to high percentages of short fibers, less than one-half inch, in the blend. Short fiber measurements using the Servo Fibrograph yield a coefficient of correlation of 0.93 with Suter-Webb arrays.

Desperate situations require desperate methods, and it was in this manner that a crash program for the control of short fibers in the mix originated. It was found that some of the cotton going through the mill measured as high as 25% of fibers shorter than one-half inch. Calculations by the laboratory showed that 14% short fibers in an $1\frac{1}{16}$-inch cotton based on Suter-Webb arrays was equivalent to 35% coefficient of variation, which previous experience has shown was the upper limit for good spinning. Therefore, 14% was set as the maximum per cent of short fibers allowable in a mix.

The system used for controlling mixes was: (1) Before a mix was laid down a small sample of cotton from each bale was sent to the laboratory where it was blended and a composite test for short fibers run on the Servo Fibrograph. (2) If the composite short fiber percentage was 14% or below, the mix was allowed to be opened. If it was over 14%, the mix was held out and another mix substituted. Samples from each individual bale in the faulty mix were redrawn and tested individually on the Fibrograph. The bales with the highest per cent of short fiber were eliminated from the mix and other bales substituted in order to bring the average per cent short fibers down to 14%. The reconstituted mix was put back into production.

During the early stages of the use of this method, it was not uncommon to have to replace or reconstitute four or five mixes a day with some of the mixes running as high as 21% average short fibers. At the end of about two weeks the results of this program began to be seen as ends-down in spinning started to decrease. The most notable result was that the blow-ups in spinning that had been experienced in the past six or eight months were eliminated.

Short fiber percentage determinations have since been extended to cotton in the warehouse and to cotton *before shipment* to the mill.

In order to get quantitative and qualitative data, a special series of tests was set up. The object of the test was to pinpoint the amount of influence that different percentages of short fibers have on spinning ends-down and yarn quality under average mill conditions. The test included three levels of short fiber percentages—8% (low), 12% (average), and 15% (high). The Pressley break, Micronaire and staple length of the three samples were controlled as closely as possible. Results of this test are:

	8% SF	12% SF	15% SF
Breaks per 1,000 spindle hours	32.6	52.1	54.8
Per Cent Increase	—	59.8%	68.1%
Yarn Break Factor	1904	1753	1620
Per Cent Decrease	—	7.9%	14.9%
Single End Breaks			
grams to break	334	321	298
per cent elongation	8.3%	7.8%	7.2%
coefficient of variation	13.1%	11.8%	13.2%

A New Cotton Trashmeter

By HARVIN R. SMITH
Dept. of Agriculture

THE Department of Agriculture has been interested in the precise measurement of color and of the amount of trash on the surface area of cotton samples for many years in connection with its cotton grade standards program. Until very recently the Shirley Analyzer has provided the only practical method by which the foreign matter content of lint samples could be measured. While this device does a fairly good job of physically separating lint from foreign matter, it does not evaluate leaf or trash content in a sample of cotton as the classer does.

An instrument to evaluate leaf or trash content was evolved and contracts let to the Outlook Engineering Corp. to build it. Specifications provided that the instrument be designed on the principle of television scanning, with a signal utilization system to provide two readings, one a measure of the total area of trash on a given surface; the other a reading to provide a measure of the number of trash particles on a given surface.

Provision was also made for adjustment of the reflectance threshold level at which separation would be made of "trash" or "dark" particles against the lighter background color of lint cotton, and that the instrument should scan an area about 4x4 inches and measure particles as small as 0.01 inch with a precision of plus or minus 0.005 inch.

The Outlook Cotton Trashmaster was delivered in June 1959 and has been under evaluation since that time. The instrument requires about three seconds to scan a 4x4-inch sample of cotton. Results are indicated on two meters. One meter indicates the fraction of the total area of a sample surface occupied by the dark areas of trash and the other gives an indication of the relative number of particles. The level of reflectance at which the dark particles will be counted is adjusted by a threshold control. The shaping and modification of the signals passing through the threshold level eliminate the effects of background color as well as variations in the level of reflectance provided by the trash particles themselves.

During the 1959 crop year Trashmeter and Shirley Analyzer tests were made on all samples collected for our Annual Fiber and Processing Quality Survey. These tests showed that the Trashmeter measurements provide a sharper distinction between grades than measurements made on the Shirley Analyzer, for there seems to be less overlap between grades as measured on the Trashmeter than for those made with the Shirley Analyzer. One may conclude from this that the Trashmeter sees cotton more like the classer does.

These results are encouraging and we believe that refinement of test procedures and calibration techniques should make it possible to improve on the precision reported. It is expected, with additional work, this instrument will prove a valuable companion to the colorimeter in our standards and cotton classing programs.

It should be mentioned that we are also evaluating the small Fractionator recently developed by the ACCO Laboratories at Houston, Texas, and are enthusiastic about its possibilities. Preliminary measurements with this instrument agree closely with those made on the Shirley Analyzer. We are awaiting receipt of an improved model. We plan to run parallel tests during the 1960 season on the Fractionator, the Outlook Trashmeter and the Shirley Analyzer.

The Effect Of Fiber Length On Single Fiber Tensile And Resilience Properties

By L. REBENFELD
and POLLY K. WAY
Textile Research Institute

THE purpose of this paper is to report on a study of fiber properties as a function of fiber strength within given types of cotton. In addition to fiber strength and extensibility, which have been reported previously, the fiber resilience properties are also considered.

Two experimental cottons, Coastland RNxEt and Bobshaw 1A were used for the first portion of this study. Sub-samples of the two cottons were separated into several length groups by the Suter-Webb array method and single fiber mechanical properties of 50 fibers from each length group for each cotton were evaluated on the Instron tensile tester. The fibers were tested at one-half-inch gauge length at a constant rate of extension of 10% per minute.

In addition, single fibers from three length groups were subjected to more intensive study of their resilience characteristics. Two other cottons were used in addition to the ones previously mentioned. The fiber resilience properties were evaluated by a cyclic loading procedure using the Instron tensile tester. In the first loading cycle, when the one-gram force level was attained, the cross-head of the Instron was immediately reversed and the fiber unloaded to a zero force level. The second loading cycle was begun with no relaxation period other than that afforded by the time to make necessary adjustments on the tester. The second loading cycle was carried to the fiber rupture point.

Fiber characteristics evaluated from the first loading cycle include specimen test length, elastic modulus and extensional resilience. From the second loading cycle the specimen test length and elastic modulus were again evaluated.

Results from this work include: (1) these data indicate that longer fibers within a given cotton are finer in much the same way that the longer staple cottons are generally found to be finer; (2) fiber breaking tenacity remains essentially constant up to the mean length and then rises significantly to another levelling off value; (3) breaking extension, unlike breaking tenacity, is not a continually increasing function but passes through a maximum value; and (4) fiber toughness, defined as one-half the product of fiber breaking extension and breaking tenacity, also varies with fiber length with a maximum value again being observed.

Summary

Single fibers from length groups above and below the mean length from several cotton types were examined and the dependence of fiber mechanical properties on fiber length are reported. Fiber linear density decreases with fiber length while the fiber breaking tenacity and elastic modulus increase with fiber length. The fiber breaking extension and toughness increase with length initially and subsequently decrease with increasing fiber length. The fiber resilience characteristics were shown to be dependent upon fiber length for only one of the cottons studied.

Design, Construction And Performance Of Saco-Lowell/Uster Versa-Matic ADC Draw Frames

By PAUL B. WEST
Saco-Lowell Shops

THE specifications for the design of the Saco-Lowell/Uster Versa-Matic ADC Draw Frame considered the following conditions mandatory: (1) the system should be truly automatic in its control over a wide range of weight variations including those of extremely short term; (2) the design for an automatic control system should not place a limitation on delivery speeds; (3) the frame should demand no extra skill or knowledge on the part of the operators; and (4) the amount of maintenance and time required for the automatic control system should be kept to a minimum.

The drafting element of the new draw frame consists of four lines of rolls which feed a pair of calender rolls associated with a conventional coiling mechanism. The total draft in this element is divided into two important drafts plus a tension draft. The main draft takes place between the third and fourth rolls and constitutes the main reduction with a value primarily dependent upon the number of slivers fed.

The center zone between the second and third rolls is occupied by the sensing or measuring device and utilizes only a tension draft. The front zone between the first and second rolls is the variable draft zone with a mean draft in the order of 1.25. The customary tension draft also occurs between the front roll and the calender rolls.

The stock in process on passing through the sensing zone excites a transducer of the capacitance type which produces a signal in proportion to the weight per unit length. This signal is to control the correction of the measured strand. To accomplish this, it is necessary to delay the signal to allow the material time to pass from the measuring head to the zone where the correction is to take place. The front roll speed can be made to vary plus or minus 20% from the mean; so, it is possible to correct weight variations within that range.

The salient features of the ADC controls include: (1) high accuracy measurement of variations; (2) precise control of time delay; (3) very fast response; and (4) continuous establishment of an average value about which corrections for uniformity are made.

It goes without saying that all the latest regular Versa-Matic features, such as unit gearing, overarm weighting, stop motions, optional mechanical or pneumatic clearers, and the like, have been retained in this new frame. The basic frame size of this machine remains unchanged compared to the regular Versa-Matic. However, important savings of floor space can be generally realized, particularly in some instances when only four cans per delivery are required in the creel.

Performance

While the number of mill trial installations, both in this country and abroad, have been relatively limited, we have obtained important results. These results have been substantiated by tests of large poundage and show practical advantages gained through the use of ADC including:

(1) an important reduction of the C.V. of yarn numbers.

Brown, Hall, Tallant, Craven, Dexter

Speakers on the opening day of the clinic included Hugh Brown, research consultant, Clemson, S. C.; Laura Hall, The Kendall Co., Paw Creek, N. C.; John Tallant, associate physicist, U.S.D.A. Southern Regional Research Laboratory, New Orleans; C. J. Craven, professor, University of Tennessee, Knoxville; and Lindsay Dexter, assistant treasurer, Pepperell Mfg. Co., Boston, Mass.

(2) an important reduction in the range of yarn numbers.
(3) a reduction of ends-down at spinning.
(4) a reduction of re-ties at winding and fewer tailings at spooling.
(5) a reduction in the number of stops in warping.
(6) a reduction in loom stops at weaving.

It has also been noted that in multiple-end knitting the use of ADC yarn has put an end to "tiger stripes." The increased uniformity of the ADC yarn would also be apparent in the weave of critical fabrics. The Versa-Matic ADC frame as now being produced finds its major application in the combed yarn organization. Modifications of the drafting element presently underway will greatly expand its application to carded work.

Recent Developments In Roving Frame Design

By CARL D. BRANDT
Whitin Machine Works

BEFORE any actual work could be started in the design of a new roving frame a number of assumptions and limitations had to be made. In the instance of the new Whitin frame the bobbin was to be 14x7 inches and the space 10¼ inches; the flyer speed to be up to 1,200 r.p.m.; and the drafting range to allow roving up to 1.5 hank to be made.

Spindle speed is almost entirely dependent upon flyer construction. Therefore, some new type of flyer with built-in stiffness became the first requisite. Use of new materials, more precise balancing and high-speed photography made this possible.

Because of increased size and weight of the flyer and roving bobbin, a more substantial spindle and bolster are required for the new frame. Spindle whip and vibration, especially when the bobbin rail is at its lowest position, must be kept at a minimum. Also, a smooth running bobbin rail must be provided if well-built bobbins are produced.

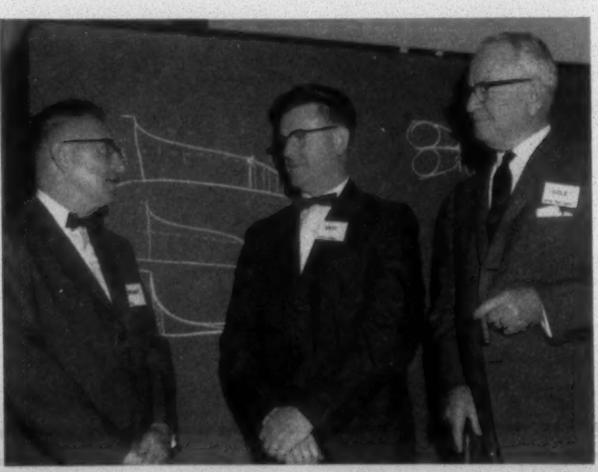
The bobbin drive no longer makes use of the old conventional horse-head as it is well known that this introduces creep as the rail rises and falls. Instead, the two rows of bobbin gears are driven by a common shaft receiving its power from a vertical splined shaft. Helical cut gears are used. The aim and object of all these refinements is to put an optimum weight of roving on the bobbin. While the theoretical maximum full bobbin weight is 105 ounces, under normal operating conditions a net weight of approximately six pounds should be quite acceptable. This means a 96-spindle frame will produce roving in total weight better than the equivalent of a bale of cotton at each doff.

Tension becomes much more critical with the increase in density of the roving package. There is no longer any "give or take" at the bobbin and consequently take-up tension must be very exact. Various means are used to localize the increased tension at the presser; one of the simplest being the extra wrap around the presser leg.

Due to increased load resulting from bigger and heavier bobbins in the new frame, cones have been re-designed. Both top and bottom cones have been increased in size and contours are checked electronically.

Many of the operating elements of the new frame have been relocated. The head-end now becomes the center of operation since it contains most of the driven components. Another feature that saves the operator time and trouble is the automatic wind-back of the cone belt at the end of the doff. The doffing cycle is not set into operation at the end of the carriage stroke but is delayed to start at any chosen point along the bobbin length. The means for this control are located in a special timing box located in the head-end. A second function of this mechanism is properly positioning the flyers for piecing-up when the frame stops.

Provision has been made on the new frame to apply the regular cotton drafting systems. Using top arm suspension with anti-friction top rolls and ball bearing bottom rolls, oiling is completely eliminated. Cleaning becomes a much simpler problem.



Brandt, West, Cole

Speakers at the third session of the clinic were Carl Brandt, Whitin Machine Works, Whitinsville, Mass.; Paul West, Saco-Lowell Research Center, Clemson, S. C.; and Burrell Cole, Cole Engineering Co., Columbus, Ga.

The Phantom Drafting System

By BURREL C. COLE
Cole Engineering Co.

THE superior performance of the Phantom drafting system is believed due in part to: (1) sealed and nonchoking top rolls; (2) uniform tension on short bottom aprons; (3) uniform weight and weight distribution; and (4) freedom from adjustments which are subject to human error.

The first step in the development of the system was building a pregreased, sealed roller bearing top roll. The special bearing has hardened and ground rollers, rotating around a hardened and ground shaft with hardened races pressed into each end of the rotating bosses. Hardened thrust numbers operate in the same lubricant as the rollers. Tension seals operate against a radius on the shaft which both seals the lubricant in and lint and foreign matter out.

An improved, one-piece bracket was developed for the system. The bracket not only positions and aligns the front roll but also supports a double boss stainless steel top nose bar for dual apron drafting on Roth type frames. Since apron guides make no contact with any roll, cradles are eliminated. A removable, double bossed, stainless steel bottom nose bar eliminates the need for long drafting aprons and tension pulleys.

A die-cast, interlocking, two-piece saddle was developed after finding that a pair of short bottom aprons would establish forward position and parallel relation to the steel rolls. The unit, held on gage with the bosses of steel rolls by the stirrup, eliminates the need for suspension bars, nebs or overarms.

The Phantom pressure unit is installed directly on the roller beam in place of the pivot screw. It has a pivoted lever similar to that of the gravity system. A single enclosed adjustable spring applies downward pressure on the lever. With stirrup released, pressure may be adjusted to equal that of any gravity weight by attaching an ordinary scale to the lever at the same point gravity weight is usually hung. This may be done before or after installation.

Because the Phantom assembly is manufactured to duplicate bottom line spreads, there are no top roll spread adjustments. The forward position of the top roll assembly is determined by the diameter size of the bottom aprons. The system uses continuous synthetic aprons. Tension on each bottom apron is about five pounds. A nose bar spacing of four millimeters has been used successfully on yarns ranging from 8.80s to 60s made from 0.50 to 2.00 hank roving.

The Phantom system is dry and wide open, thus lending itself perfectly to modern blowers and vacuum applications. Because of the heavier torque load on middle rolls caused by high drafts, compound draft gearing with a larger and stronger gear for the middle line drive is recommended.

Influence Of Fabric Structure On Tear Strength Of Resin-Treated Cotton Fabrics

By E. JAMES STAVRAKAS
Fabric Research Laboratories

RESEARCH has demonstrated that subtle changes in fabric geometry can improve the tear strength of light-weight, resin-treated cotton fabrics without damaging other properties, changing the basic fabric type or adding cost. Moreover, in certain cases variations in fabric structure can result in greater resistance to tear in a resinated fabric than in its non-resinated counterpart.

Similar efforts to improve the tear strength of heavy weight cotton fabrics have not been as successful.

Scouring frequently has a much more deleterious effect on tear strength than resin finishing and could be a profitable area for concentrated study.

Extensive laboratory studies were made of one group of ten commercial cotton fabrics which included printcloths, broadcloths, sateens, twills and chambrays, and another group of 23 experimental cotton fabrics produced with systematically varied structures from one lot of Deltapine 15 cotton. This latter group was subjected to the same preparatory finishing treatment—desizing with enzyme, kier boiled and chemically bleached. The 23 experimental fabrics represent four classes—namely, printcloths, broadcloths, sateen work clothing and heavyweight twills. These classes of cotton fabrics are produced in large quantities with resin finishes.

The laboratory results allowed the drawing or substantiating of certain conclusions. The tear strength of a fabric is dependent upon its total load-carrying capacity to the point where yarns begin to rupture. This yarn rupture at a tear is dependent upon: (1) yarn tensile strength; (2) number of yarns in the "del" (a crotch-like region formed where the fabric is being torn) supporting the applied load; (3) uniformity of loads being borne by the del yarns; and (4) support of the fabric which surrounds the del region. Anything which alters one or more of these properties can influence the tear strength of a fabric. These changing influences include crimp, yarn strength, yarn mobility, cover factor, weave floats and threads per inch.

Conclusions found in each sample of fabric include:

Printcloth

(1) A fancy weave (2x2 basket) is the most effective design feature for improving the level of tear strength.

(2) Combining a longer float weave with a decrease in cover factor and heavier filling yarn resulted in the highest values of tear resistance.

(3) Utilization of coarser (stronger) filling yarns in plain weave samples with either a decrease in filling cover factor or the same cover factor yielded significant improvements in filling tear resistance.

(4) The use of coarse filling yarns with a decreased filling cover factor resulted in an improved level of tear strength in the resin-treated sample only.

Broadcloth

(1) Filling tear resistance in all resinated experimental fabrics except one was found equivalent to that of the non-resinated control.

(2) Significant improvements in tear strength were realized in fabrics with longer floats (3/1 twills) or with two ends weaving as one (oxford).

(3) Substitution of slightly coarser filling yarns with concomitant reductions in weight and/or cover factor was particularly successful in improving filling tear strength.

Sateen

(1) A sateen of 22/1 warp and 15/1 filling yarn and 120x52 threads per inch in the off-loom state and 125x50 threads per inch after resin finishing was by far the best of the samples studied.

(2) Variations in geometry which on the basis of known theory should have improved tear resistance failed, with one exception, to do so.

(3) Resin finishing, with one exception, diminished tear resistance.

Scouring

Contrary to popular belief, scouring often causes a much more serious loss in tear strength than does resin finishing. Removal of the natural lubricants from the cotton by the scouring process results in marked constraints on the ability of the yarn to move in the plane of the fabric. Thus the number of yarns moving into the del is seriously reduced and the load-carrying capacity of the del structure decreases accordingly.

Textile people have taken scouring for granted for a long time—much longer than resin finishing. But if tear strength is the big problem that many feel it is, we had better take a long, hard, critical look at the scouring process.

New Developments In Roving Package Winding

By GASTON G. FORNES
and JOHN H. ROBINSON
Institute of Textile Technology

DURING the past four years extensive work improving roving package winding mechanisms has been underway at the Institute of Textile Technology. These researches have been along the following general lines: (1) high-winding tension effects; (2) increased package volume for the same size bobbins; (3) density variation in the wound package; and (4) winding tension control. This work has led to the development of the roving frame variable pitch builder.

The time-honored method of controlling the package weight has been to increase the roving tension and to decrease the package taper to avoid overruns until a stalemate was reached in the increment of weight increase. To be able to increase both the tension and the taper was considered impossible with even the best of the latest conventional roving frames.

A revolutionary concept of changing the profile shape for the wound package ends, which permits a convex profile, was conceived. This profile curve has a large initial taper angle and a controlled decreasing taper angle as layers of roving are added. Mathematically exact curves govern the convex profiles selected for use. This type of profile permits a high volume package and at the same time permits a high tension wind without increasing overruns.

The device which permits this convex build consists essentially of a variable pitch, single-groove, helical builder screw actuating follower-pins in the builder jaws which then control the shortening of the successive layers as they are wound on the package. In no way does the variable pitch builder interfere with the normal operation of the roving frame and requires no special attention of the roving frame tender.

Increase In Volume

By using the variable pitch builder on 1.25 hank roving, a comparison test was made on a 10x5 roving frame using normal wraps+one on the presser with the conventional constant lead builder screw versus the variable pitch builder screw. Keeping all gearing constant, the convex profile builder showed a weight gain of 8.8%, 40.9 to 44.5 ounces net weight. This larger roving package will stand even rougher handling when doffing and creeling than the conventional roving package.

Summary

I.T.T. has pioneered in high tension roving winding studies and developed both the roving frame variable pitch builder and the winding tension regulator mechanism. In actual mill tests, conventional roving frames modified by installing the variable pitch builder and the winding tension regulator mechanism have shown beneficial results including:

(1) roving package weight gains of 20 to 60%

(2) permits more spinning frames to be added without increasing the number of roving frames

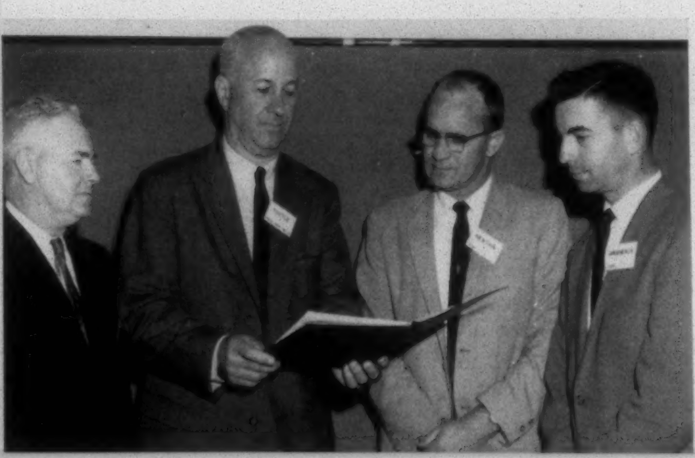
(3) change-over to larger size roving packages may not be necessary to get more production

(4) high quality control with fewer overruns and tension breaks

(5) less labor in roving and spinning required and a smaller (bore) bobbin inventory

(6) roving packages remain more stable during handling

(7) cost of devices may be amortized in one year, or less, as a result of the reduction in cost to produce a pound of yarn



Fornes, Tuttle, Newton, Arceneaux

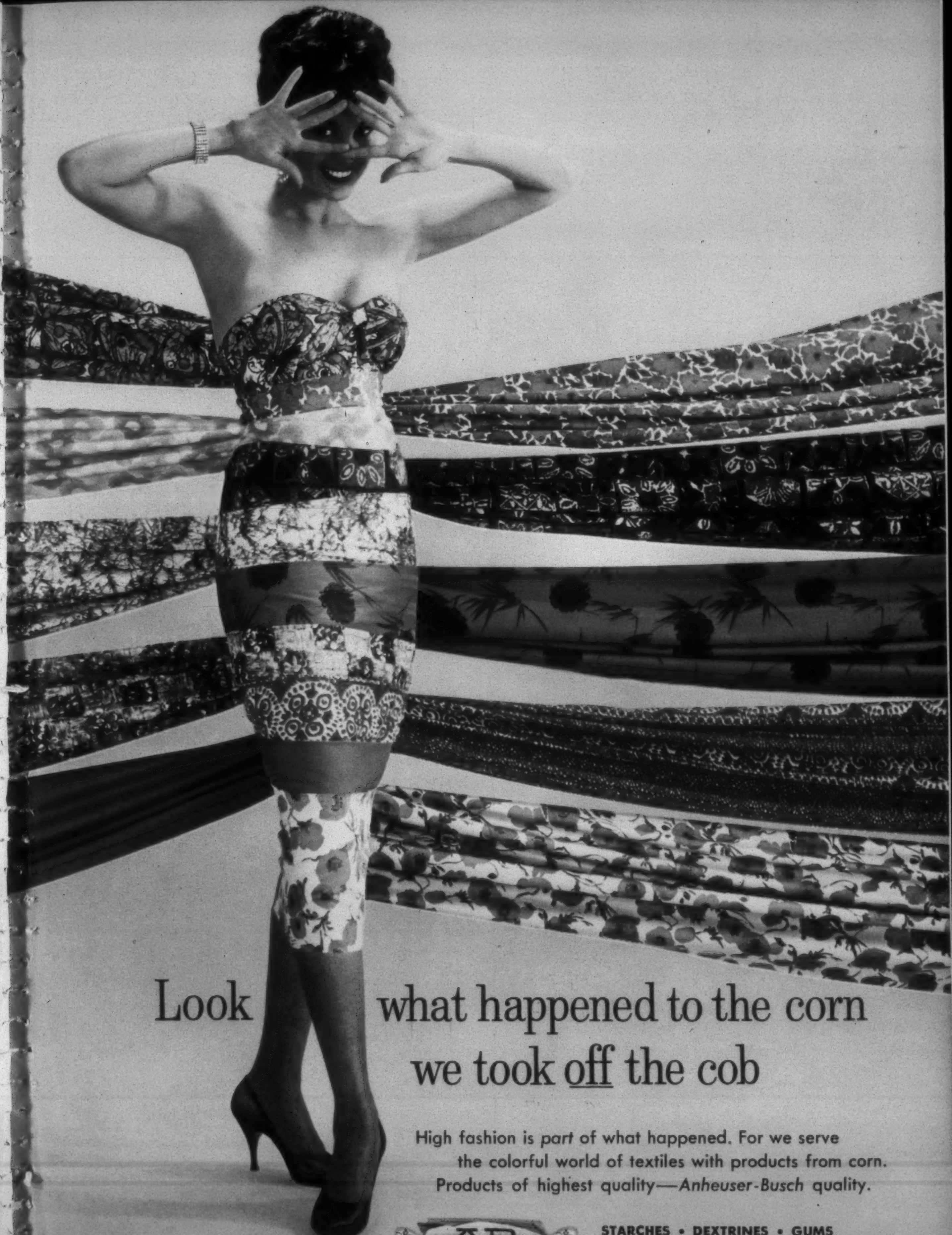
Speakers at the final session of the clinic were G. G. Fornes, Institute of Textile Technology, Charlottesville, Va.; chairman of the session Richard Tuttle, director, research and quality control, Fieldcrest Mills, Spray, N. C.; Franklin E. Newton, cotton technologist, U.S.D.A., Washington, D. C.; and Richard L. Arceneaux, Southern Regional Research Laboratories, New Orleans.

Influence Of Fabric Structure On Crease Recovery And Tensile Strength Of Resin-Treated Fabrics

By RICHARD L. ARCENEAUX
Dept. of Agriculture

TWENTY-THREE cotton fabrics varying in one or more structural parameters were treated with a wrinkle resistance agent, dimethylol ethylene-urea (DMEU) and also with the agent in a formulated treatment. The effects of the structural variables on crease recovery angle, tearing strength, breaking strength and resin distribution were studied.

Interactions of fabric properties with fabric direction necessitated a study of fabric properties on each direction rather than on the average or sum of both directions. The treatments tended to narrow the spread of crease recovery angle found in the untreated fabrics bringing the crease recovery angle of each fabric closer to that typical of the treatment. The use of fancy rather than plain weaves caused an improvement in tearing strength properties. The use of



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coarser yarns also improved tearing strength properties. Distribution of resin content between warp and filling yarns was affected by variations in yarn twist multiplier. Breaking strengths of the various fabrics were not greatly affected by the structural variations in the fabrics.

A New Look At Cotton Quality Relationships

By **FRANKLIN E. NEWTON**
Dept. of Agriculture

COTTON quality, as an over-all measure, has never yet been defined satisfactorily; usually one factor of quality receives particular emphasis. Sometimes yarn strength is emphasized, sometimes it is yarn appearance, sometimes manufacturing waste. Each of these is dependent on many measurable raw cotton properties. In our laboratory testing program we have considered the following measures as indicative of processing and product quality: (1) per cent manufacturing waste; (2) yarn strength; (3) yarn appearance; (4) color of bleached yarn; and (5) color of dyed yarn.

When the explanation of variance of quality is related to a factor not included in standards for grade and staple, then additional tests are needed in order to provide a better prediction of the quality measure that is deemed important.

For the full range of grades or staples in the standards bales, there is very little difference between the amount of variation explained by the classer and that explained by laboratory measures that are similar to grade and staple. In the Annual Quality Studies, with a considerably restricted range of grades and staples, the explained variation is lower than for the more complete range of the standards, yet the differences between the variation explained by the classer and by similar laboratory measures are relatively on the same level.

Regression lines on waste, strength and appearance charts indicate: (1) that waste is less for the same grades in 1958 than in 1946, but that over the years the relationship between waste and Shirley Analyzer nonlint has remained nearly constant; (2) that differences in yarn strength between grades have increased gradually since 1946 (with exceptions in 1949 and 1950), that this gradual trend of change is confirmed by the relationships shown between yarn strength and color, and that yarns made from the same lengths are stronger in 1958 than in earlier years, whether measured by classer or laboratory; (3) that appearance of yarn is slightly lower in 1958 than in earlier years for the same grades and same Micronaire readings; (4) that yarns bleach whiter for higher than for lower grades, and with one exception are on about the same level for all years, whether judged by classing or laboratory measures; (5) that the dyed yarn index shows a considerable relationship to grade, and to color, with only slightly different levels between years.

Based on comparative costs of testing, it seems clear that until more precise measurement can be made by laboratory instruments which are economically comparable to classification, the most practical approach is to use these tests in developing and maintaining standards, and as a supplement

(Continued on Page 72)

The Loomfixer And His Job

Part Twenty

PROPER SETTING AND FREQUENT INSPECTION OF SHUTTLE BOXES ARE IMPORTANT DUTIES

By **WILMER WESTBROOK**

PROPER adjustment of the shuttle boxes is necessary for efficient loom operation since a poorly boxed shuttle will:

—Cause loss of production through loom stops when the shuttle fails to enter the box as it should

—Damage the battery and other filling changing mechanism parts when the shuttle is not seated correctly for the transfer of filling

—Cause wear and damage to the protector motion

—Wear the shuttle abnormally

—Cause warp end breakage

—Cause overshots, mispicks, jerk-ins and other cloth defects

—Cause wear and damage to the boxes, filling forks, temples and other loom parts.

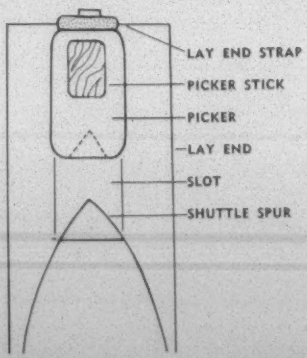
The box plates should be kept in good condition. Metal contact surfaces should be smooth and free of nicks and scars. Covered parts should have good, smooth leather which should be kept lubricated with tallow or a prepared leather dressing.

Inspect the boxes regularly and look for worn or loose leather covering, loose screws, burred and chipped edges. Keep the back box plates squared to the lay ends and aligned with the reed. See that no screw or belt protrudes to cut the shuttle.

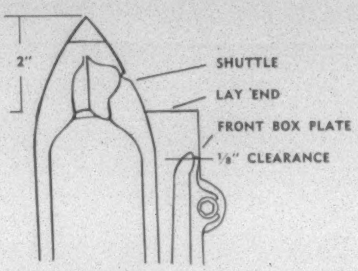
Aligning The Protector Motion

Since the protector motion is so closely allied with the shuttle boxes, it should be correctly aligned and set before the boxes are adjusted. Turn the eccentric bushing in the binder until it is in its extreme back position. Push the shuttle into the box until the tip is about 1″ from the picker in its back position.

Move the front box until the shuttle spur is exactly above the center of the slot in the lay end. This position can be found by using a shuttle centering gauge or by standing above the lay and sighting down at the spur and the slot.



Adjust the box so that the tip of the shuttle spur will be directly above the center of the slot in the lay end.



With the front box plate gauge, set the box for a 1/8″ clearance, as shown.

Pull the shuttle forward until the tip of the spur is about 2″ beyond the inner end of the lay end and the flat surface of the shuttle is parallel with the front of the front box plate. Have 1/8″ clearance between the shuttle and the front box plate near its inner end. This setting can be checked by using a front box plate gauge.

With the shuttle in the above position, turn the eccentric binder bushing until the dagger just clears the frog steel.

Filling Transfer Setting

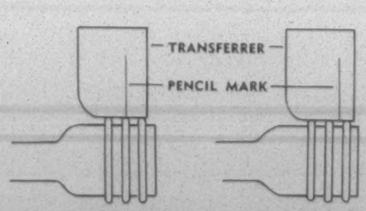
When the shuttle is in the right hand box it is also important that it be in correct position for the transfer of filling. To check this setting, place a bobbin in the battery in transfer position. Pull the transferrer down until it touches the rings of the bobbin. With a pencil, make a mark on the transferrer directly above the middle ring of the bobbin. Remove the bobbin from the battery and place it in the shuttle with the shuttle spring gripping all three rings.

Push the shuttle into the right hand box as far as it will go, then pull the transferrer down until it touches the bobbin in the shuttle. The pencil mark should now be centered between the first and second rings of the bobbin.

If the shuttle does not go far enough into the box to line up the mark and the rings, remove some packing from the lay end strap or use a thinner strap. If the shuttle goes too far into the box, place some packing under the lay end strap.

This setting should be checked often because much damage to loom parts and material can be caused if the shuttle is not in exact position for the transfer of filling.

When the shuttle boxes have once been set, do not move



Position the shuttle for the transfer of filling with a pencil mark aligned as on the left with the bobbin in the battery and as on the right with the bobbin in the shuttle.

them except to compensate for wear to the covering or to the shuttle. Any small adjustment can be made by turning the eccentric binder bushing.

Many loomfixers move the front boxes every time the shuttle bounces or doesn't enter the box correctly. Better results can often be obtained by making adjustments to the check straps, the heel straps or to the protector motion.

Avoid Having Shuttle Boxes Too Tight

The shuttle boxes should not be too tight. Have them adjusted so that, with the protector motion finger held away from the binder, you can slide the shuttle back and forth in the box with one finger.

If the boxes are too tight it will take extra power to drive the shuttle from one box and seat it in the other. Shuttle flight will be uneven and extra wear to the shuttle and boxes will result. Skill and experience are required to box the shuttle correctly.

After the settings have been made, pull the shipper handle on with the lay in back position and the shuttle seated firmly in the box. Stop the loom when the shuttle enters the opposite box and see if it enters and seats correctly. Try the same procedure with the shuttle travelling to the opposite box.

If the shuttle is boxed so that the loom will operate, pull the shipper handle on, and with the loom running, see if the shuttle is seated firmly and without bouncing on each pick.

Eagle & Phenix Rearranges Its Cloth Room

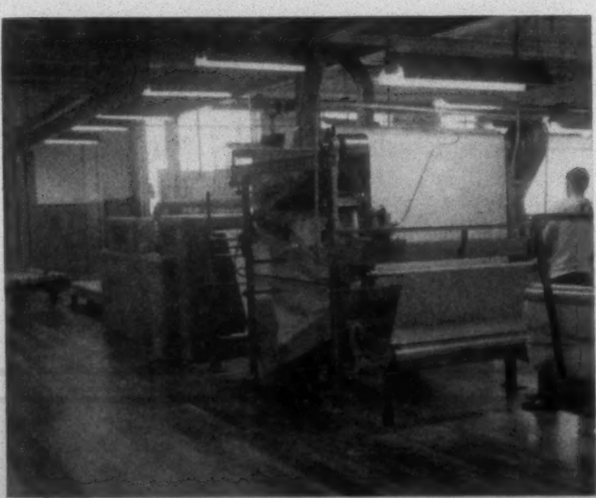
LABOR COST SAVINGS AND A BETTER LAYOUT HAVE BEEN ACHIEVED AS A RESULT OF THE CHANGE

THE cloth room of Eagle & Phenix Division, Reeves Brothers Inc., Columbus, Ga., has been completely remodeled. The layout is designed to give straight flow of materials with a minimum of handling. There is ample work space for each operation but none of the floor space is wasted. Walls and equipment are kept almost spotlessly clean—the hardwood floor is sanded and varnished.

Latest piece of equipment in the room is a Curtis & Marble shearing machine. This machine has an air-controlled shear and eight adjustable brushes.

Stitching is done with a Singer automatic-threading seamer that sews a straight seam and minimizes turned selvages.

The air is kept free of lint and dust by a new filter that is connected to both the shear and the brushes of the shearing machine. This filter is cleaned out twice weekly but it is capable of operating efficiently for a full week without attention.



Newest piece of equipment in the cloth room is this Curtis & Marble shearing and brushing machine.

An electric hoist mounted on an overhead rail is used to move the rolls of cloth from the shearing machine to the burling machines. Each of these rolls contain 800 to 1,000 yards of cloth.

There are 11 burling machines in two parallel lines, back to back. These machines have a vertical backdrop of transluscent glass, illumined by four 85-w fluorescent tubes.

The cloth passes downward over this lighted panel, which shows the slightest defect in the cloth, and over a work table where loose threads and other imperfections are removed and defects are flagged by looping a strand of colored thread in the selvage.

Flow of cloth over the table is controlled by a foot lever that leaves both hands of the operator free.

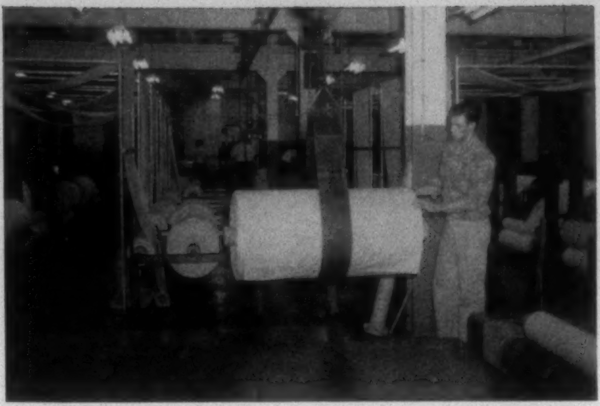
A rack at the back of the burling machine holds two rolls so that a minimum of downtime is caused when a roll is exhausted. Both rows of machines are served by the one electric hoist. A tension bar mounted between the roll of cloth and the top guide roll prevents the cloth from overrunning when the machine is stopped.

There are 12 flat inspecting and burling tables with transluscent tops illumined by fluorescent tubes. These tables are also mechanized, the cloth being pulled from a roll and over the lighted top.

Most of the cloth inspected and burled on these tables is direct from the loom. Rolls are loaded at the back of the tables and, after inspection, they are unloaded onto a belt conveyor that transports them to the end of the double row of machines and dumped onto a platform.

An operator removes the rolls of cloth from the platform and places them on trucks or in bins, segregated by styles, until enough cloth of a particular style has been accumulated for a bale or shipping roll. Rolls that contain seconds and cloth that is to be baled is folded.

Burling and inspecting machines have vertical inspecting surfaces at eye level.



An electric hoist is used to transport the rolls of cloth from the shearing machine to the burling machines.

Heavy cloth such as corduroy, gabardine, poplin, plaids and cord is run through a stitcher and put up in large rolls. The stitcher has an air-controlled selvage trimmer. A roller conveyor transports the rolls from the stitcher to the scales.

Folded cloth is placed on flat trucks, compressed on an up-lift hydraulic press, and baled without being removed from the truck.

Red, white and blue tabs are inserted between the folds to flag the shift marks so that the grader can quickly tally the yards of seconds produced on each shift.

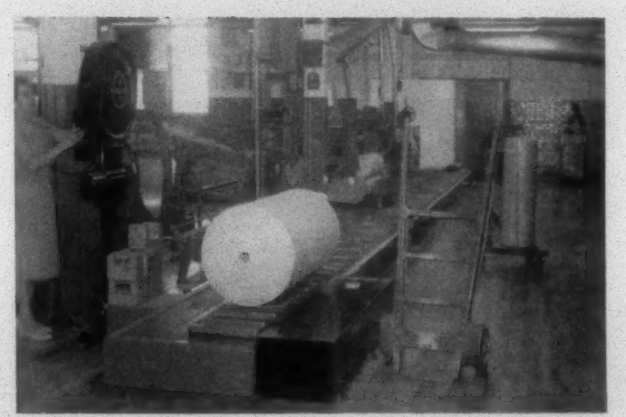
Close liaison is maintained between the cloth room and the weave room. A ticket is made out and sent at once to the weave room when it is found that a particular loom is producing seconds. The ticket contains the loom number, the type of defect and has a space for the loomfixer and the foreman to sign it when the loom has been fixed.

A daily report is filled out that shows the loom number, yardage and type defect of all cuts of seconds containing 40 yards or more. The original report is sent to the weave room overseer and a copy is given the superintendent for follow-up.

The cuts of cloth shown on the daily report are also sent to the weave room to be shown to the weavers and loomfixers.

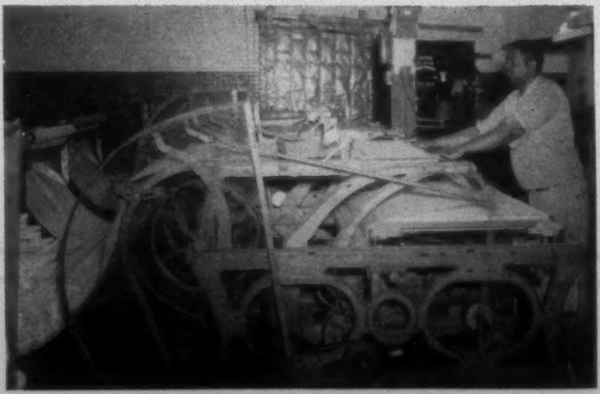
About 60% of the cloth produced at Eagle & Phenix is made from combed yarn. Among the styles produced is corduroy, Bedford cord, ginghams, twill suitings, poplin, sateen and sheeting.

Cloth that contains defects is folded, re-inspected and graded.



Roller conveyor carries the rolls of cloth from the stitchers to the scales.

Belt conveyor carries cloth from burling tables to loading platform.



Cloth that is to be baled is folded.

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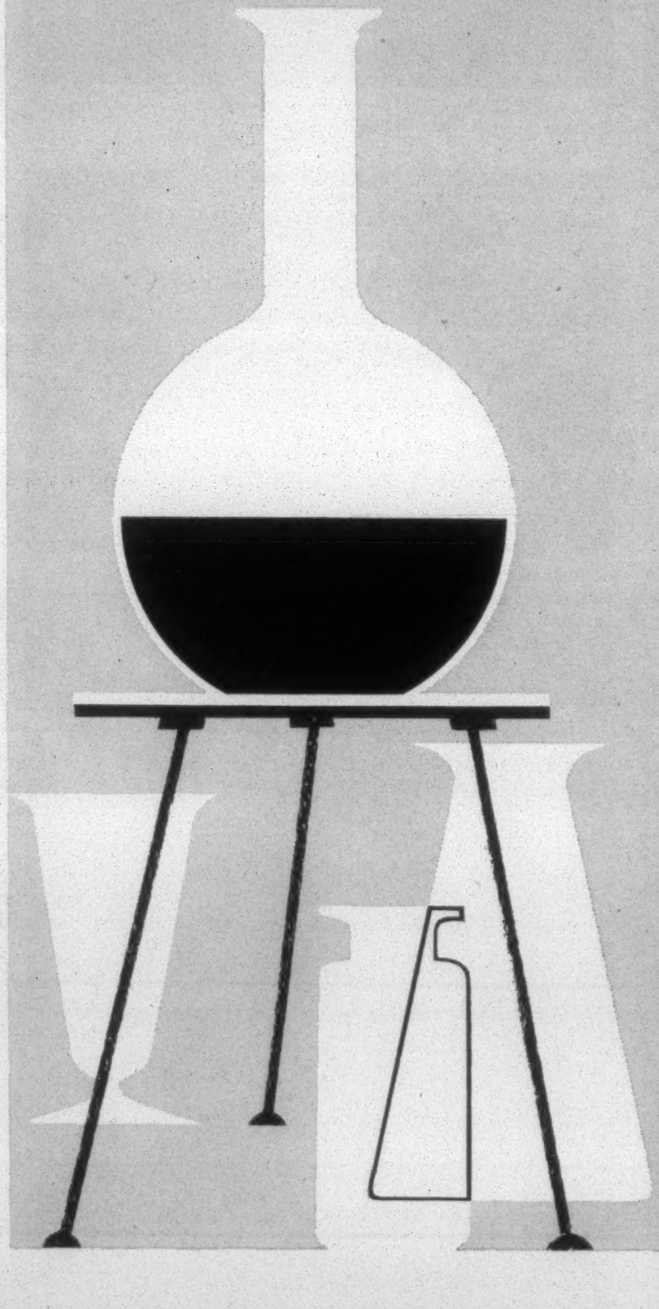


Southern Textile Association Holds 52nd Annual Meeting In Asheville

MEMBERS of the Southern Textile Association, at their 52nd annual meeting in Asheville, N. C., June 23-25, elected R. M. McCrary of Hart Cotton Mills, Tarboro, N. C., as president for the coming year.

Other officers named by the more than 700 members and their wives in attendance included W. B. Etters of Reeves Bros. Inc., Spartanburg, S. C., first vice-president; and Herman Cone Jr., Cone Mills Corp., Greensboro, N. C., second vice-president. Joe N. Jenkins of The Kendall Co., Pelzer, S. C., retiring president, was elevated to chairman of the board of governors to succeed Walter D. Vincent of Dan River Mills, Danville, Va.

Elected to four-year terms on the S.T.A. board were Smith Crow Jr. of Leward Cotton Mills, Worthville, N. C.; and A. L. Joslin, Dan River Mills, Danville. Re-elected with terms expiring in 1964 were Troy H. Carter of Woodside Mills, Greenville, S. C., and Nelson W. Kessell, P. H. Hanes Knitting Co., Hanes, N. C. Louie Burkes of Calhoun Mills, Calhoun Falls, S. C., was named to fill the board vacancy created by the election of Herman Cone Jr. to the second vice-presidency.

Continuing members of the board include Jesse Boyce, Erwin Mills, Durham, N. C.; R. Carter Henry, J. P. Stevens & Co., Piedmont, S. C.; Rodger Hughes, Reeves Bros. Inc., Spartanburg; J. W. Inscoe, Carolina Mills Inc., Maiden, N. C. *(with terms expiring in 1961);* Joseph F. Chalmers, Greenwood (S. C.) Mills; L. W. Thompson, Pacific Mills, Halifax, Va.; Charles H. Ward, Highland Cotton Mills, High Point, N. C. *(with terms expiring in 1962);* H. W. Buchanan, Erlanger Mills, Lexington, N. C.; Ralph C. Going, Fieldcrest Mills, Draper, N. C.; R. P. Hardeman, Riegel Textile Corp., Ware Shoals, S. C.; and Thomas E. Lawson, Pacific Columbia Mills, Columbia, S. C. *(with terms expiring in 1963).*

Import Threat Reviewed

Cheatham

J. M. Cheatham, president-elect of the American Cotton Manufacturers Institute, a featured speaker at the convention's opening business session, reviewed the industry's current position in regard to the free trade policies being jammed down the industry's throat by administrators of U. S. foreign trade. He warned that a continuation of those policies that seek to strengthen the economies of other nations at the expense of basic domestic industries will jeopardize U. S. economic expansion, job security and the standard of living of American workers.

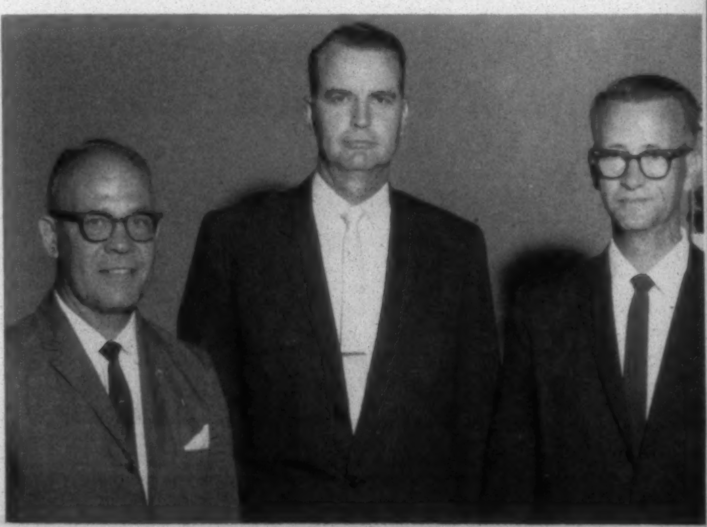
Quoting Commerce Department figures, Cheatham called attention to the fact that cotton yarn imports this past April swelled the volume for first quarter 1960 to 5,481,503 pounds, more than four times the total for all of 1959, which was in itself a record year. Imports of cotton cloth, not counting made-up goods, hit a record 240,765,000 square yards last year, he pointed out.

"If this were straight-from-the-shoulder, head-to-head competition among American and foreign manufacturers, I would be concerned, certainly, but not disturbed as I am. The simple truth is that it is not fair competition. It is a product of the unwillingness of the administrators of U. S. foreign trade operating policies to recognize the differences that exist in the sources of American-made and foreign-made goods."

He pointed out that politics, of course, is inextricably wound into the whole business of foreign trade. "One of the political practicalities almost everyone seems to accept is that the ultimate strength of the Free World is dependent on the strength of the U. S. Our standing in international affairs fluctuates with our moral prestige, our military ability, our scientific accomplishments, and our economic soundness. Perhaps it would be sufficient to say that our standing fluctuates with our economic soundness, because most of the other factors certainly rest on that. As the dollar rises or falls, so does our ability to provide for or purchase from the other nations of the world.

"Therefore it would seem to be simple logic to demand fair, honest and equitable foreign trade policies that will assure this nation's continued economic strength. Without such policies, our economic expansion, our capital investment in plants and equipment in this country and the job security and standard of living stand in jeopardy."

Speaking prior to the announcement of the Tariff Commission's adverse ruling on the Section 22 petition of the



Etters, McCrary, Jenkins

Newly elected officers of the S.T.A. include W. B. Etters, Reeves Bros. Inc., Spartanburg, S. C., first vice-president; R. M. McCrary, Hart Cotton Mills, Tarboro, N. C., president; and Joe N. Jenkins, The Kendall Co., Pelzer, S. C., chairman of the board of governors. Herman Cone Jr. of Cone Mills Corp., Greensboro, N. C., is the group's new second vice-president.

Barrie, Gregg, Chalmers
Taylor, Seacord, deLoach, Harrison, Cline, Gill

S.T.A. associate member officers for 1960-61 include Frank P. Barrie, Leesona Corp., Charlotte, vice-chairman of the division; E. Haines Gregg, A. B. Carter Inc., Gastonia, N. C., chairman of the council; and Carl M. Chalmers, Texize Chemicals Inc., Greenville, S. C. Council members include J. Randolph Taylor, *America's Textile Reporter*, Greenville, S. C.; James F. Seacord, Ashworth Bros., Charlotte; Francis deLoach, Seydel-Woolley & Co., Spartanburg; Henry Harrison, Harrison & Hurley Inc., Greenville, S. C.; C. F. Cline, Clinton Corn Processing Co., Greenville, S. C.; and Russell Gill, Arnold, Hoffman Co., Atlanta.

Winners in the ladies' nine-hole golf tournament included Rachel Merritt (Carl F. Merritt, The Hubinger Co., Piedmont, S. C.), first low net; Grace McCrary (R. M. McCrary, Hart Cotton Mills, Tarboro, N. C.), first low gross; Jim Hale (Robert L. Hale, J. P. Stevens & Co., Anderson, S. C.), second low net; Jan Oliver (Joe F. Oliver, Stodghill & Co., Atlanta), high gross; and Francis Terrell (W. S. Terrell, Terrell Machine Co., Charlotte), second low gross.

Rachel Merritt, Grace McCrary, Jim Hale, Jan Oliver, Francis Terrell

Morgan, Wood, Merritt, Clark, Nuttall, Costello, Goodwin, Vincent, Glass

Top winners in the men's 18-hole golf competition included Max Morgan, J. P. Stevens & Co., Rock Hill, S. C., members' first low net; John W. Wood, J. P. Stevens & Co., Great Falls, S. C., members' first low gross; Carl F. Merritt, The Hubinger Co., Piedmont, S. C., associates' second low gross; James R. Clark Jr., Woodside Mills, Greenville, S. C., members' third low net; Norman H. Nuttall, Stein, Hall & Co., Charlotte, associates' fourth low net; L. F. Costello, Stein, Hall & Co., New York City, associates' first low net; Henry Goodwin, Steel Heddle Mfg. Co., Greenville, S. C., associates' first low gross; Walter Vincent, Dan River Mills, Danville, Va., members' second low net; and George Glass, Mystik Adhesive Products Inc., Burlington, N. C., associates' third low net.

Agricultural Adjustment Act, Cheatham commented that should the commission rule against the industry "our only recourse will be to the Congress for legislation."

Other guest speakers at the meeting included W. C. Daniel, Dan River Mills, Danville, Va., and Dr. R. C. S. Young, General Motors Corp., Detroit, Mich.

Associate Members Division

In an election of officers for the S.T.A.'s supplier group, associate members named Carl M. Chalmers of Texize Chemicals Inc., Greenville, S. C., to succeed E. Haines Gregg, A. B. Carter Inc., Gastonia, N. C., as chairman of the division. Gregg was elevated to chairman of the associate member council to succeed R. W. Dunn of Whitin Machine Works, Spartanburg. Named to succeed Chalmers as vice-chairman of the division was Frank P. Barrie, Leesona Corp., Charlotte. Junius Smith, TEXTILE BULLETIN, Charlotte, was re-elected secretary.

Newly elected members to the associate council include James F. Seacord, Ashworth Bros., Charlotte; H. B. Patterson, Whitin Machine Works, Greensboro; J. Randolph Taylor, *America's Textile Reporter,* Greenville; Russell Gill, Arnold, Hoffman Co., Atlanta; and Henry Harrison, Harrison & Hurley, Greenville. Leon Jones was named to fill the unexpired term of the late R. E. L. Holt Jr., Holt & Associates Inc., Greensboro.

Continuing as council members are William H. Dulaney, A. E. Staley Mfg. Co., Atlanta; Francis deLoach, Seydel-Woolley & Co., Spartanburg; C. F. Cline, Clinton Corn Processing Co., Greenville; and Charles S. Mason, Sykes Inc., Charlotte.

Golf Winners

Taking top member honors in the convention's 18-hole golf competition were:

Low Gross (75)	John W. Wood J. P. Stevens & Co., Great Falls, S. C.
Low Net (58, gross 92)	Max Morgan J. P. Stevens & Co., Rock Hill, S. C.
Second Low Net (60, gross 118)	Walter Vincent Dan River Mills, Danville, Va.
Third Low Net (61, gross 89)	James R. Clark Jr. Woodside Mills, Greenville, S. C.
High Gross (153)	R. C. Hoffman Reeves Bros., Spartanburg, S. C.

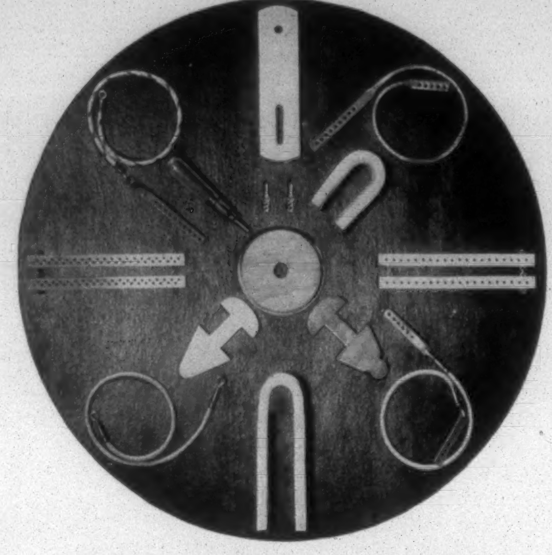
Winners in the associate members division included:

First Low Gross (75)	Henry Goodwin Steel Heddle Mfg. Co., Greenville, S. C
Second Low Gross (78)	Carl Merritt The Hubinger Co., Piedmont, S. C.

Officers and board members in attendance at the 1960 convention included *(front row, left to right)* Ralph C. Going, Fieldcrest Mills, Draper, N. C.; Rodger Hughes, Reeves Bros. Inc., Spartanburg, S. C.; J. F. Chalmers, Greenwood (S. C.) Mills; W. B. Etters, Reeves Bros. Inc., Spartanburg, first vice-president; R. M. McCrary, Hart Cotton Mills, Tarboro, N. C., president; Joe N. Jenkins, The Kendall Co., Pelzer, S. C., board chairman; Lewis W. Thompson, Pacific Mills, Halifax, Va.; and Thomas C. Lawson, Pacific Columbia Mills, Columbia, S. C.

***(Second row, left to right)* Troy H. Carter, Woodside Mills, Greenville, S. C.; Joe W. Inscoe, Carolina Mills Inc., Maiden, N. C.; Nelson W. Kessell, P. H. Hanes Knitting Co., Hanes, N. C.; Horace Pennington, Cone Mills Corp., Greensboro, N. C.; Horace W. Buchanan, Erlanger Mills, Lexington, N. C.; Walter D. Vincent, Dan River Mills, Danville, Va.; and Louie Burkes, Calhoun Mills, Calhoun Falls, S. C.**

***(Back row, left to right)* Jesse Boyce, Erwin Mills, Durham, N. C.; Smith Crow Sr., Erlanger Mills, Lexington, N. C.; T. I. Stafford, Clifton (S. C.) Mfg. Co.; Smith Crow Jr., Leward Cotton Mills, Worthville, N. C.; R. P. Hardeman, Riegel Textile Corp., Ware Shoals, S. C.; and Jack Kissiah, Textile Bulletin, Charlotte.**



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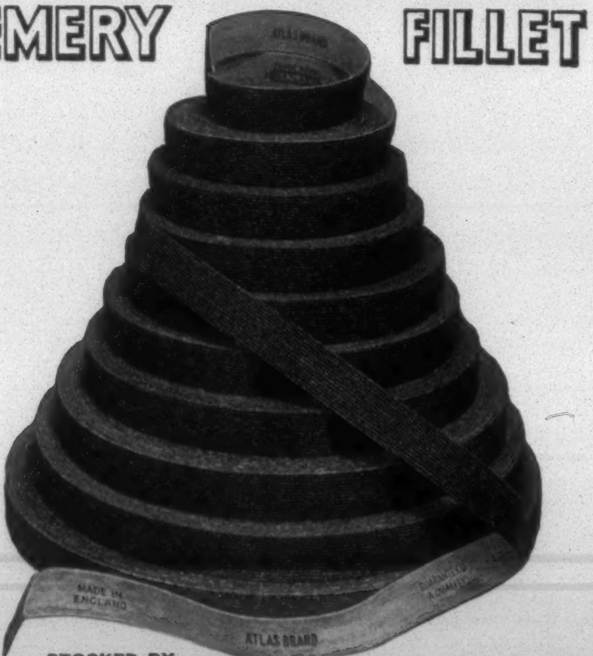

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Gregg, Terrell

W. S. (Bill) Terrell, Terrell Machine Co., Charlotte, was presented an engraved desk clock in appreciation for his many years of service to the S.T.A. as chairman of its convention golf outings. E. Haines Gregg, A. B. Carter Inc., Gastonia, N. C., chairman of the association's associate member group, made the presentation.

First Low Net (59, gross 87)	L. F. Costello Stein, Hall & Co., New York City
Second Low Net (59, gross 90)	M. O. Bradshaw Roberts Co., Sanford, N. C.
Third Low Net (59, gross 101)	George Glass Mystik Adhesive Products Inc., Burlington, N. C.
Fourth Low Net (60, gross 88)	Norman Nuttall Stein, Hall & Co., Charlotte, N. C.
High Gross (128)	Bobby Glenn Dayco Textile Products Co., Greenville, S. C.

Prize winners in the ladies' nine-hole competition:

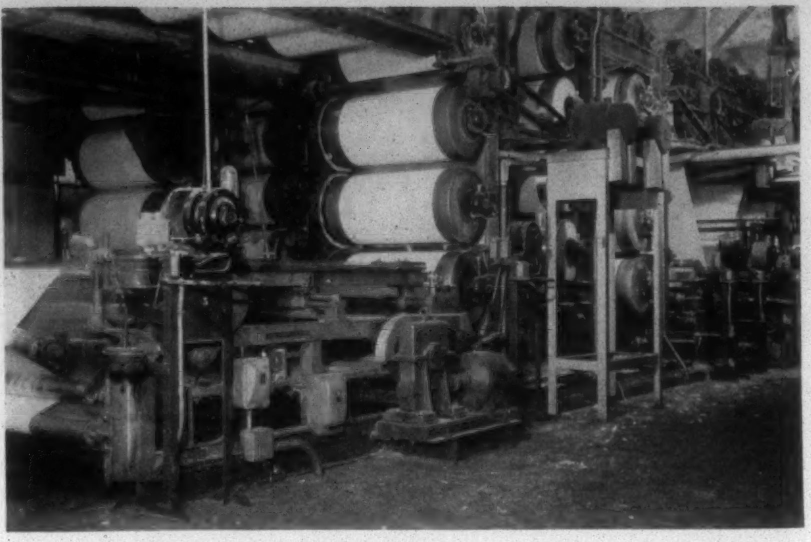
First Low Gross (50)	Grace McCrary R. M. McCrary, Hart Cotton Mills, Tarboro, N. C.
Second Low Gross (52)	Frances Terrell W. S. Terrell, Terrell Machine Co., Charlotte, N. C.
First Low Net (27)	Rachel Merritt Carl F. Merritt, Hubinger Co., Piedmont, S. C.
Second Low Net (28)	Jim Hale Robert L. Hale, J. P. Stevens & Co., Anderson, S. C.
High Gross (76)	Jan Oliver Joe F. Oliver, Stodghill & Co., Atlanta

Textile Mill Products Profits Down In First Quarter Of 1960

Textile mill products profits after taxes totalled $93 million during the first quarter of 1960, according to the Federal Trade Commission. Sales for the period totalled $3.3 billion. This compares with profits after taxes of $121 million on sales of $3.6 billion in the final quarter of 1959 and profits of $80 million on sales of $3.2 billion in the first quarter of 1959.

Goodrich Studies New Tire Cord Fibers

The B. F. Goodrich Co., Akron, Ohio, is experimenting with the use of a variety of new fibers for use in tire fabric. The fibers being studied are Vycron, its own polyester fiber; Terylene, a polyester by Imperial Chemical Industries; Dacron, Du Pont's polyester; Vinal, a Japanese polyvinyl; and HT-1, a polyamide fiber by Du Pont. The company reports that the fibers and fabrics now in use in the rubber industry are quite adequate for today's tires. In seeking new ones it is preparing for the day when greater speeds and horsepower may make present tires and fabrics obsolete.



On the spot conversion equipment is being effectively employed by Cone Mills' Revolution Plant in Greensboro, N. C., in connection with this mangle dry can range. It is driven by three Allis-Chalmers d.c. motors controlled by 40-h.p. Ultra-Speed package drive.

The Use Of Package Drive Units To Provide D.C. Power To The Mill

By DONALD M. SIBLEY*

MORE and more applications in industry today require d.c. motors with wide operating speed range to obtain higher flexibility of machines and equipment. To provide d.c. power throughout a plant for these motors would be prohibitive in cost since entire d.c. feeder and distribution networks would be required. Then, too, d.c. networks do not provide efficient transmission. The best answer is on-the-spot conversion equipment which can be readily located as plant layout dictates.

Effectively meeting the need for d.c. power in many textile mills today is the package drive unit. It consists of a motor-generator set and control equipment mounted in a compact ventilated cabinet. Filtered air circulated through the cabinet prevents dust and dirt from entering. Where foreign materials in the air are a special problem, large units come equipped with a separately driven blower for operation when the motor-generator set is idle.

Controls located within the cabinet include resistors, contactors and relays. A magnetic amplifier is normally used to control the generator field. The operator's control station permits fine speed selection at the turn of a rheostat. Standard control is usually start-and-stop operation plus a rheostat for speed setting. Where such functions as jogging, inching and reversing are required, additional controls may be added.

For the mill contemplating possible installation of a package drive unit, certain factors should be taken into consideration to assure the most efficient operation. Thought should be given to the type of machine drive with which it will be used with attention given to shock loads, atmospheric conditions, dynamic balance, starting conditions, etc. The driven machine should also be taken into account, including any special duty cycle, frequent reversals or stopping.

The horsepower rating, operating speed range and desired mechanical features of the required d.c. drive motor or motors should be analyzed. The type of enclosure, temperature rise and other features of the d.c. drive motor contemplated are significant. It is desirable to know whether this motor will require armature voltage control for constant torque such as needed for driving machinery or field control for constant horsepower such as used for reeling, or both. The method of connecting the drive motor to the driven machine is also important.

To determine the proper selection of the power unit, the control functions to be performed should be studied. Will the control be needed for forward jogging only, for jogging forward and reverse only, for dynamic braking, reversing, jogging and dynamic braking, or threading?

The method of speed control has a bearing on the selection of a power unit. Will the application require a manual speed control rheostat, with or without pre-set speed; a motor-operated speed control rheostat, with or without regenerative braking; compulsory low-speed start with rheostat off-position interlock, or servo-preset speed control system?

Other control requirement possibilities include motor field loss relay, motor field economizing relay, emergency stopping, auxiliary control equipment, either a.c. or d.c., and interlocking units with other controls such as solenoids, limit switches, remote starters, etc.

The desired speed regulation should also be taken into account along with the operating voltage of the plant in which the power unit is to be installed.

The type of operator's control station with a designation of the type of mounting and enclosure, plus a detail list of the control elements, meters and other items to be included along with marking nomenclature will materially assist in the selection of an efficient power package unit.

By first completing an analysis of this type, a mill can be assured of a properly engineered package drive unit—one which combines dependability with positive speed control.

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*Allis-Chalmers Mfg. Co., Charlotte, N. C., district office.

Conducting A Mill Training Program

A TRAINING PROGRAM MUST "PULL-OUT" UNCONSCIOUS KNOWLEDGE USED ON THE JOB AND MAKE ADVANTAGEOUS USE OF IT

By C. ROSS BEALL*

Part Two

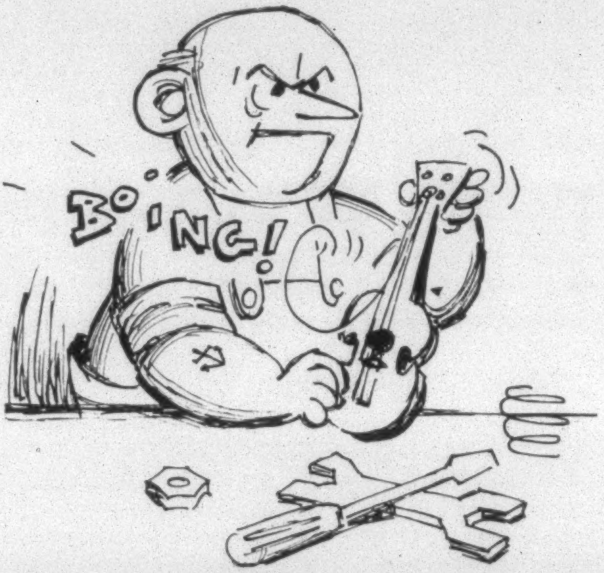
THERE is a saying, "Anyone can put strings on a violin, but it takes a violinist to tune it." This saying seems somehow to fit our program of training at the Opp-Micolas plants, since it is our desire not only to train the new workers but to improve the skills of those who are already on the jobs.

By informing, by instruction and by conferences we expect to get across to all our workers the information necessary to do the job in the best manner. Each of the above methods of training have their values under certain conditions, and under other conditions they have little value. A new worker's need at the very first is information. He needs to know what his job will be, his responsibilities, his working conditions, his pay, his work week, his safety responsibilities on the job, the smoking regulations, coffee breaks, his chances for advancement, who will instruct him, acquaintance with his shift foreman, etc. Most people can be trained more easily if these points are carefully gone over with them in the beginning by the supervisor of training, personnel director or supervisor for whom he is to work. Our training supervisor will impart this information to all new workers.

Unconscious Knowledge

Persons of long experience on a job know much more about their jobs than they are fully aware of. They have developed an assortment of habits on their jobs which means that they do things without being conscious of it. These habits can be good or bad. It is our purpose to work individually with these persons on the job and in the conference room in order to find both the good and bad habits which may have become an unconscious part of their working methods. A spinner may put up an end without realizing or thinking of the *way* she is putting it up. It may be the best way an end can be put up or it may be a way that will produce rejects in later processes. A loom fixer may put on a picker that will throw a shuttle true in its flight without being any more conscious of the method than a man tying his necktie.

It is the constant work of our training department through conference room procedure to bring out the skills of the workers who are really not aware of the scope of their job knowledge and to share it with the lesser skilled workers to increase their knowledge. Also as we instruct on the job we try to ferret out the bad work habits—many of which may be the subconscious nature formed over a long period of time—and begin to train the worker away from these habits. We find that it takes longer in most cases to do this than it does to train in a new method. In our conferences we can "pull out" information on job knowledge that we would otherwise never have had and use it advantageously.



Anyone can put strings on a violin but it takes a violinist to tune it.

Pooling Experiences

The pooling of all experiences simplifies our training greatly by gaining this knowledge in the conference room. Our plan is to carry the conference procedure to spinners, section men, loom fixers, weavers and foremen. There are very few experts, so we feel the sensible apporach to our training program is to utilize not only the recognized skills but the skills that our workers have of which they are unaware and which we uncover in the conference room and on instructional procedure on the job.

Conference Sessions

To balance our training program, we have conferences of informational nature which are conducted by the plant manager. In these classes information on leadership, company policies, progress, etc., is taught to workers and supervisors in the same class sessions. Through the use of these methods of training we seek not only to put on the strings, but to "tune" the violin for better job performance.

---

*Training Supervisor, Opp-Micolas Cotton Mills, Opp, Ala.

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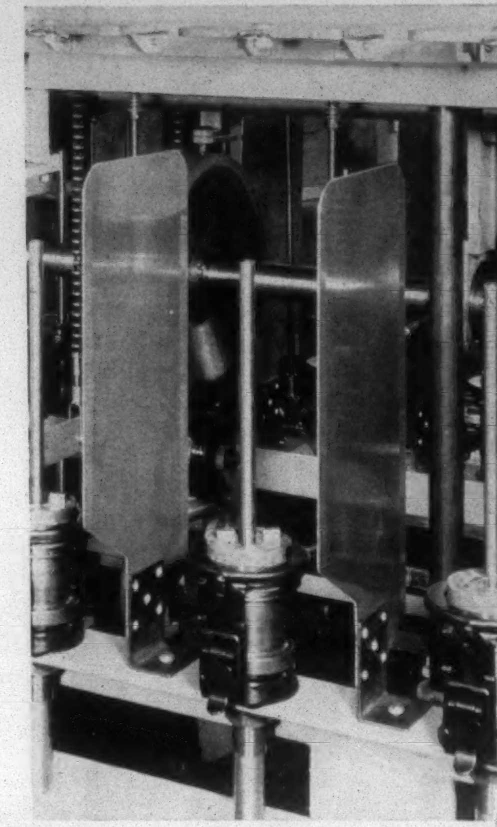

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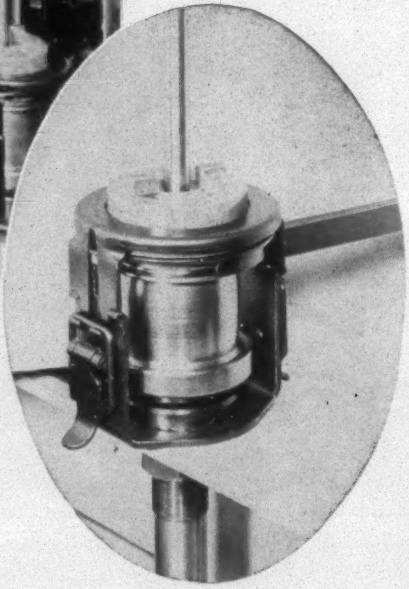

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How % CV Can Help You Control Production

PLANTS WITH PROGRESSIVE QUALITY CONTROL PROGRAMS ARE USING THE CV IN EVALUATION OF TEST RESULTS

By W. N. LILLY*

MOST of us are familiar with the term "% CV," which is the abbreviation for the coefficient of variation. The result obtained from the Uster Quadratic Integrator is % CV. We know as the % CV increases, the irregularity of sliver, roving and yarn increases. Standards have been established for comparison of results.

What Is CV?

CV is a measurement of variability for a set of test data. The variability is determined as standard deviation, and the CV is the standard deviation divided by the average test results and expressed in per cent. We can calculate the % CV for any set of test data, whether they be fineness tests, lap meter tests, yarn count tests, or any tests which have variation.

How CV Can Help Us

The textile industry has been, and always will be, plagued with variations. Our only recourse is to reduce them as much as possible. The question arises, "How can the CV help us?" Suppose a mill selects at random 50 lap samples to submit for fineness tests as a routine check on cotton blended by fineness. The average is important; however, the CV of micronaire readings provides a good method of determining how well the cotton is being blended.

Good blending is not just a uniform mix from day-to-day, or lot-to-lot, but is uniform for *each* cross-section of yarn.[1] Naturally it is impractical to measure the uniformity of fiber properties by cutting cross-sections of yarns. The CV of lap sample fineness data provides a practical indication of the variation of fiber fineness among the cross-sections of yarn.

A sample calculation for the CV of fineness is shown in Fig. 1. In this case, 4 was subtracted from each micronaire reading, simply to reduce the size of the numbers. This does not affect the results.

Example For Use

A mill might follow a system of picking ten lap samples at random each day for fineness tests. At the end of five days, 50 test results have been accumulated. The % CV for micronaire readings is calculated as shown in Fig. 1. After 10 or 12 weeks of this routine, a tentative standard is established. This may be 3.75%, with a range of 3.50% to 4.00%. One might wonder what constitutes a good, fair or poor CV. It has been reported that preblending of cotton at a mill reduced the CV of fineness on lap samples from 4.49% to 2.45%.[2]

Suppose the CV of lap fineness suddenly jumps to about 6% after averaging 3.75%. At the same time lap rejects, ends-down in spinning and seconds may be up with a decrease in weaving efficiency. Perhaps it is discovered that a couple of opening room hoppers have been out of production, off and on, for the past week. With the aid of the CV, the management can take corrective action without creating turmoil in every department.

Saco-Lowell Lap Meter And CV

The Saco-Lowell Lap Meter test is a good example for using the CV. Since evenness of slivers, rovings and yarns

Fig. 1—% CV Of Fineness For 50 Lap Samples

Micronaire Reading	Reading less 4 (X)	Frequency (F)	(X)(F)	X^2	$(X^2)(F)$
4.3	0.3	2	0.6	0.09	0.18
4.4	0.4	11	4.4	0.16	1.76
4.5	0.5	25	12.5	0.25	6.25
4.6	0.6	11	6.6	0.36	3.96
4.7	0.7	1	0.7	0.49	0.49
No. of Tests		50			
Sums			24.8		12.64

Average Reading 4.5

(A) Standard Deviation = the square root of

$$\left\{ \frac{\text{Sum of } [(X^2)(F)] - \dfrac{\text{Sum of } [(X)(F)]^2}{\text{No. Tests}}}{\text{No. Tests} - 1} \right\}$$

(B) Standard Deviation = the square root of

$$\left\{ \frac{12.64 - \dfrac{24.8^2}{50}}{50 - 1} \right\} = \sqrt{0.0069} = 0.083$$

(C) % CV =

$$\frac{\text{Standard Deviation} \times 100\%}{\text{Average}} = \frac{0.083 \times 100\%}{4.5} = 1.84\%$$

---

[1] James C. Barnes, "Factors Influencing Blending," paper presented before the Textile Quality Control Association, Fall meeting, September 25, 1958, Asheville, N. C.

*Cone Mills Corp., Research and Development Division, Greensboro, N. C.

[2] David E. Howe and Joe F. Mattison, *Textile Research Journal,* Vol. XXIX, No. 9, 1959.

are recorded mostly as % CV, wouldn't it be helpful to know the CV of the laps? Fig. 2 shows graphs of two lap meter tests. Both are 100% within limits of plus or minus 2/5 ounces, but it is plain that lap A is better than lap B. By calculating the % CV, Figs. 3 and 4, a tangible difference is found.

Lap B is about 50% more uneven than lap A with 1.87% and 1.22% CV, respectively. This illustrates the limitations of the per cent within limits evaluation for lap meter tests.

Data Used In Calculating For CV

If a mill is testing five bobbins of each yarn construction per day for strength and count, daily calculations of CV for five tests would not be justified. The amount of data is too small for effective results. If CV is calculated from a ten-day accumulation of data, there are 50 figures to use, which are more meaningful. It takes very little more time to calculate the CV for 50 figures than it does for five.

Conclusions

Averages are, and always will be, important. We all know that yarn numbers must average close to standard, or the cloth weight will be out of tolerance. When the average of two sets of data are about the same, the CV could reveal some important facts. The mill with the lower % CV of yarn numbers will produce smoother fabrics with less defects. Plants with progressive quality control programs are using the CV in evaluation of test results.

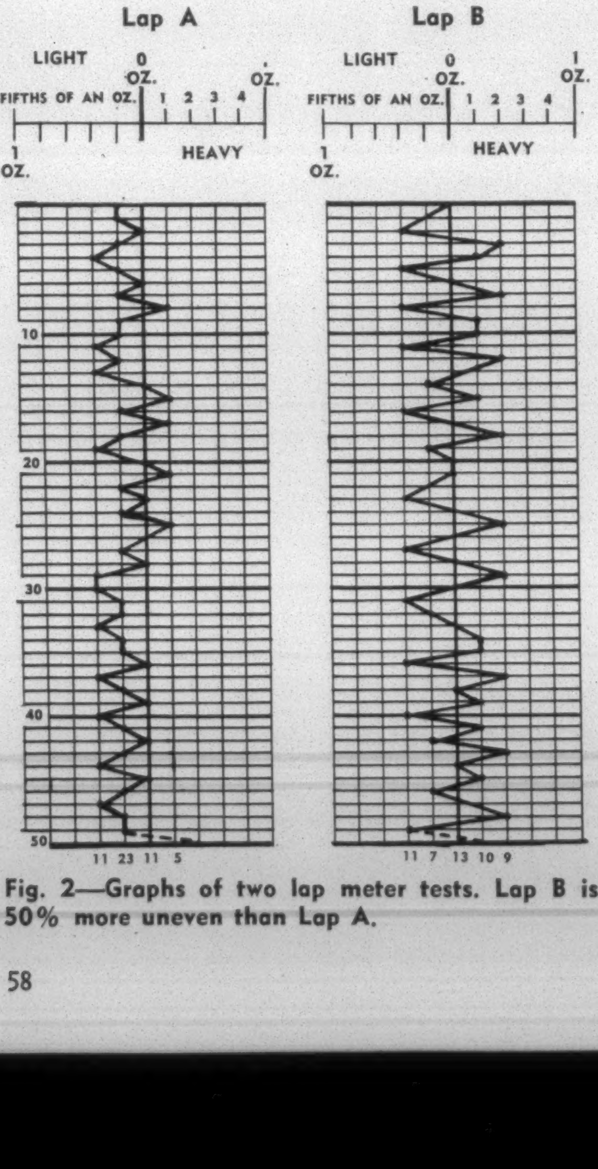

Fig. 2—Graphs of two lap meter tests. Lap B is 50% more uneven than Lap A.

Fig. 3—% CV, Calculated From Saco-Lowell Lap Meter Record
Lap A—Average Weight 14.8 Ozs./Yd.

Points on Graph		Points as Decimals (X)	Frequency (F)	(X)(F)	X²	(X²)(F)
4/5 oz.	Light	0.8				
3/5		0.6				
2/5		0.4	11	4.40	0.16	1.76
1/5		0.2	23	4.60	0.04	0.92
0		0	11	0	0	0
1/5	Heavy	0.2	5	1.00	0.04	0.20
2/5		0.4				
3/5		0.6				
4/5		0.8				
No. yds. weighed 50						
Sums				8.00		2.88

(A) Standard Deviation = the square root of

$$\left\{\frac{\text{Sum of }[(X^2)(F)] - \dfrac{\text{Sum of }[(X)(F)]^2}{\text{No. Tests}}}{\text{No. Tests} - 1}\right\}$$

(B) Standard Deviation = the square root of

$$\left\{\frac{2.88 - \dfrac{8.00^2}{50}}{50 - 1}\right\} = \sqrt{0.0327} = 0.181$$

(C) % CV =

$$\frac{\text{Standard Deviation} \times 100\%}{\text{Average}} = \frac{0.181 \times 100\%}{14.8} = 1.22\%$$

Fig. 4—% CV, Calculated From Saco-Lowell Lap Meter Record
Lap B—Average Weight 15.0 Ozs./Yd.

Points on Graph		Points as Decimals (X)	Frequency (F)	(X)(F)	X²	(X²)(F)
4/5 oz.	Light	0.8				
3/5		0.6				
2/5		0.4	11	4.40	0.16	1.76
1/5		0.2	7	1.40	0.04	0.28
0		0	13	0	0	0
1/5	Heavy	0.2	10	2.00	0.04	0.40
2/5		0.4	9	3.60	0.16	1.44
3/5		0.6				
4/5		0.8				
		No. yds. weighed 50				
		Sums		0.20		

(A) Standard Deviation = the square root of

$$\left\{\frac{\text{Sum of }[(X^2)(F)] - \dfrac{\text{Sum of }[(X)(F)]^2}{\text{No. Tests}}}{\text{No. Tests} - 1}\right\}$$

(B) Standard Deviation = the square root of

$$\left\{\frac{3.88 - \dfrac{0.2^2}{50}}{50 - 1}\right\} = \sqrt{0.0792} = 0.281$$

(C) % CV =

$$\frac{\text{Standard Deviation} \times 100\%}{\text{Average}} = \frac{0.281 \times 100\%}{15.0} = 1.87\%$$

SIZE

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light warps

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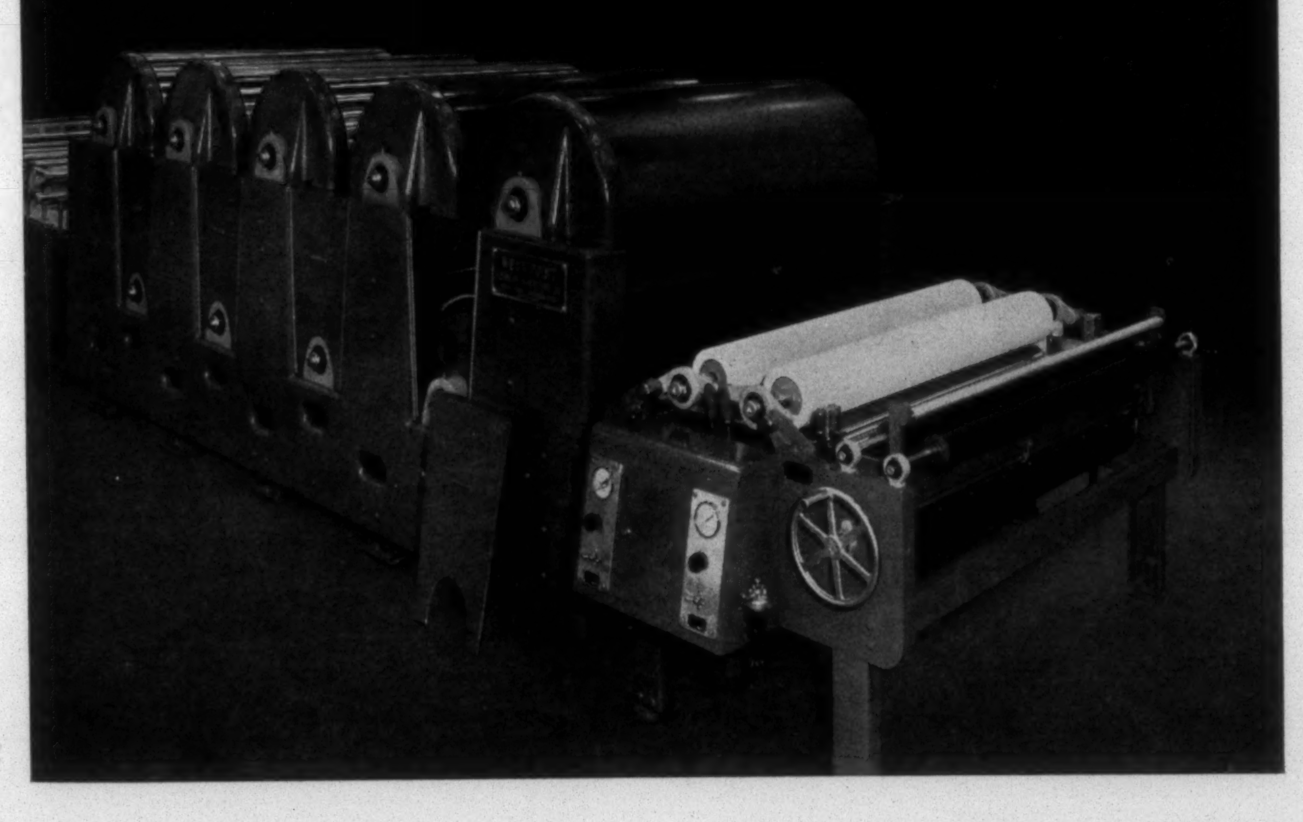

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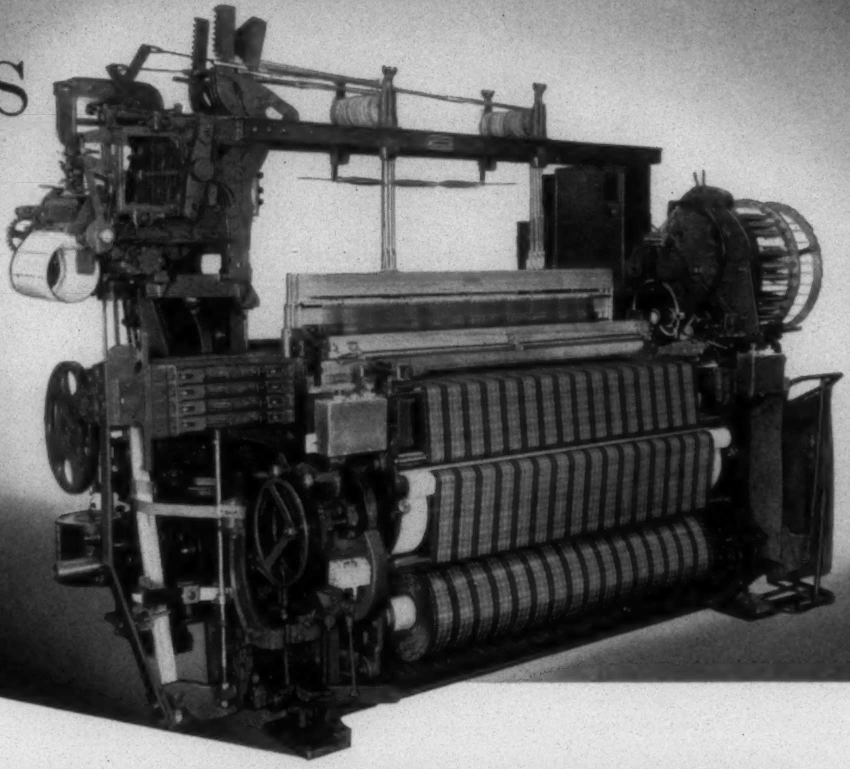

THE C&K C-7S WITH 4-COLOR ROTARY MAGAZINE

FEATURES
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- Electric protection
- 4-color rotary magazine for 36 bobbins
- Flight-type optical electronic feeler
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This new C-7S Loom offers mills weaving fine filament fabrics the opportunity to maintain a new degree of consistent high quality . . . at consistent low costs.

Besides the features at the left there are many other engineering advances that result in the remarkable performance characteristics of this new loom.

We would like to arrange for you a more complete demonstration of the C-7S Loom than was possible at the American Textile Machinery Exhibition. In the meantime, let us send you the C-7S descriptive literature.

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The Designing Of Pile Fabrics

By E. B. BERRY

THE WEAVING OF FRIEZE RAISES SEVERAL PROBLEMS THE PROBLEMS AND SOME SOLUTIONS ARE DISCUSSED HERE

Chapter 9

Frieze

THE Callaway Textile Dictionary defines frieze as follows: "An upholstery fabric having a surface of looped pile. The pile threads are commonly of mohair or worsted, and it is a fabric that will withstand hard wear. Also known as Friese."

This type of fabric was originally made in Frise, Holland. As it became popular in France, it was called frise. This is the French pronounciation for the Holland frise. At the same time, frise means "curl" which is descriptive of the loop made in this fabric. The English revision is frieze.

These fabrics may be woven on the double shuttle loom. It is customary to weave them single; that is, only one fabric being woven and two shuttles being thrown. The top pick is waste in the fabric after it comes from the loom, but is necessary to support the pile ends as the fabric is being woven.

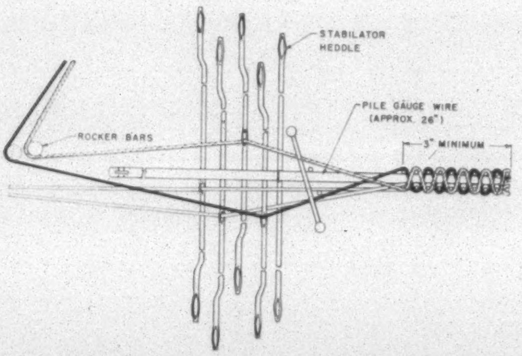

Fig. 36—Stationary pile gauge wires govern the size of the loop. They may vary in height from .030 inches to .250 inches.

Stationary pile gauge wires may be used, as shown in Fig. 36. These wires pass through the reed, and form a floor on which the top shuttle travels. When the pile ends are up, the shuttles are thrown and the top pick is left under these raised pile ends, the bottom pick weaves with the backing to form the base fabric. On the next pick, the pile ends will be down, but will be kept above the wire by the previously thrown top pick. The bottom pick makes the ground fabric. A pile gauge wire will be needed every dent, or every other dent, since the top pick, which forms the pile loop, receives its support, in turn, from the wire. Too large a gap between wires will cause the filling to break, or will cause low loops if the pile ends depress the pick below its intended height.

The pile gauge wires govern the size of the loop. They may vary in height from .030-inch to .250-inch. Delivery is in turn governed by the size of wire.

Since there is a lot of pressure on the top or dummy pick as the loop is formed, a heavier filling is sometimes used here than in the bottom shuttle. This presents a problem of cost, for more pounds of filling yarn are wasted when the yarn number is heavier. Typical fillings are 30/2 K.P. Nat. for the bottom shuttle and 12/2 K.P. Nat. for the top shuttle.

Another problem is the measuring of both filling yarns so they will run out together in the loom. The 12/2 may be purchased on ball warps for the quiller as 378/4800. There will be a lease every 600 yards, so eight doffs will come out—each with 600 yards of yarn on the loom bobbins. The 30/2 is usually purchased 378/12,000 with leases every 1,500 yards or eight doffs per warp. It can be seen that the 600 yard bobbin in the top shuttle and the 1,500 yard bobbin in the bottom shuttle will not run out together or be a multiple. The 12/2 bobbin is already full so more yarn cannot be added here. Instead, the yardage on the 30/2 bobbin will have to be reduced to 600. The ball warps can still be purchased as 378/12,000 but leases every 600 yards will be inserted, instead of 1,500 yards. This means 20 doffs will come out of a warp instead of the usual eight doffs.

There is always a problem of keeping these odd leased warps separate. In addition, these odd bobbins of 30/2 will only match with the 12/2 standard bobbin. If 14/2 is used in the top shuttle in another style fabric the same 30/2 bobbins may not be used, as they will run out only with the 12/2.

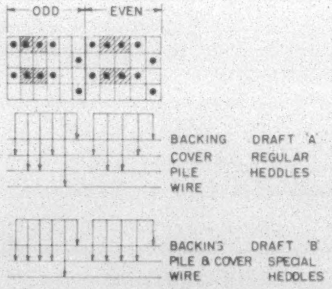

Fig. 37—The weave and drawing-in draft of a typical frieze fabric.

Fig. 37 illustrates the weave and drawing-in draft of a typical frieze fabric while Fig. 37A is the cross section. This fabric will have rows of pile loops across the fabric, from selvage to selvage. A cover system of yarns are used to give added weight to the fabric, as well as aid in the pile anchorage.

The weave repeats on two double picks. On pick one, the bottom shuttle weaves in the ground fabric, and the top

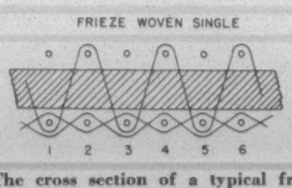

Fig. 37A—The cross section of a typical frieze fabric.

pick does nothing. Pick two, the bottom shuttle again weaves in the ground fabric and the top shuttle weaves a pick which supports the pile end. Two pile ends, weaving alternately up, down and down, up will produce loops every pick as seen in Fig. 36. The single fabric that is sold must absorb the cost of the waste top picks.

Anchorage is always an item to consider in designing pile fabrics, but the anchorage problem in frieze is somewhat different from that in velour. In frieze, there is little danger of the loop pushing from the face out the back. Anchorage is important from another standpoint, however. A loop may be caught by a person's ring and if pulled, the loops will disappear, being reduced to the surface of the ground fabric. This will leave a void or open area in the pile surface, which may ruin a chair covering if it is in a conspicuous place. If the picks per inch are high enough, the cover yarn may give sufficient anchorage to produce an acceptable fabric.

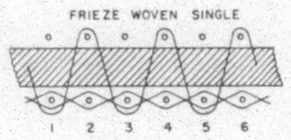

Fig. 38—The cross section of a coated frieze fabric.

When the picks per inch are low (14 to 20) the cover yarns will not help the anchorage much. Such fabrics are usually coated. The cross section of such a fabric is shown in Fig. 38. The loops are formed in the same way as in Fig. 37. The pile ends, when in the ground fabric, are below the backing. When rubber or resin is applied, it will secure the loops to the ground fabric and give adequate anchorage for customer acceptance.

Delivery Calculations

There is no "tuft" to measure in this type of frieze but a delivery figure must be calculated. In an actual fabric, exactly two inches were cut out, which contained 50 picks. A pile end from this sample stretched to 7.00 inches. The delivery then is $\frac{7.00''}{2''} = 3.50$ yards delivery.

No pile height is taken off in shearing, but a high fabric shrinkage may be expected. The delivery is dependent upon the size of the pile gauge wire, and in the finished fabric, there is no way of determining what height of wire was used. The pile yarn will have some shrinkage in the dyeing and finishing process, so it is most difficult to calculate the woven wire size. Also different manufacturers may use slightly different wires.

One way to determine the greige delivery is to compare the sample to be analyzed, with a sample of known delivery and wire size. If the loops are the same size, use the known pile delivery change gear to calculate the delivery in the sample being analyzed. If the loops are not the same, prorate the sample to the known fabric.

Commercial Standards

CS-52-35 covers 100% mohair plain frieze. Some requirements are as follows:

(1) Material of pile—The pile shall be composed of 100% genuine mohair.

(2) Loops—There shall be not less than 500 loops per square inch.

(3) Weight—The weight of the pile shall be not less than 0.70 pounds of mohair per linear yard, 54″ wide (7.47 ozs. per square yard), exclusive of selvage. Other widths in the same proportion.

Removing Waste Picks

After these fabrics are woven, the top filling or "dummy picks" are removed. This is done in several different ways. In all cases the fabrics are woven with four selvages—one on each side for the regular fabric, and one on each side (above the regular selvage) for the waste or top pick.

On the loom a bracket is secured to the top breast beam in the center. This bracket extends over the center of the cloth to within six inches of the fell, and has a razor blade on the end. This blade is depressed into the fabric so it will cut the top pick only, not the bottom pick. As the take-up roll advances the fabric, the top picks are cut in the center.

One means of removing these dummy picks is in the use of a special table. This is three feet high, about 60 inches wide and 20 feet long. At the edges of the table, on each side, are mounted old steel tenter frame pins. The cloth is unrolled on the top of the table and the selvages holding the waste picks are folded back on the fabric. With the aid of a brush, the regular selvage is forced into the pins, on each side of the table. Two men, working in pairs, grip each waste selvage and walk away from the table. The ground fabric is secured in the pins on each side and cannot move. Since the waste pick was cut in the center of the fabric at the loom, each man removes only half the pick from his side.

After pulling the filling from about one yard of fabric, the men return to the table to get another hold on the selvage. This continues until all the dummy picks have been removed from the cloth on the pins on the table. The cloth then is advanced to put the next 20 yards on the pins, and the process is continued until all the waste picks have been taken out.

Any top pick that is broken will remain in the fabric and will have to be removed by the girls in the mending room.

A second method of removing the dummy pick is by the use of moving endless tenter frame chain and pins. A section of tenter frame and pins about 40 feet long is made into a large oval, and the ends joined to make an endless chain. This is placed on a rack, or frame, so it rotates in a horizontal plane about three feet from the floor. A second chain is made just like the first, and made to rotate in the same horizontal plane. The closest point between the two chains is approximately 58 inches or the distance between the two false selvages.

A roll of cloth, with the waste picks in it, is placed in a support, directly in front of the narrowest place between the two endless chains. The dummy selvage is inserted in the pins of the tenter frame. Then the cloth is re-rolled onto another tube about 15 feet away. In traveling this distance the cloth goes straight, but the waste pick selvages, on the endless chain oval, are spread away from the fabric, which pulls out the dummy picks. At the far end of the oval, before the chain returns to grip a new section of selvage, the old selvage with its picks are stripped off the pins. This method is continuous, but requires more capital outlay than does the table method.

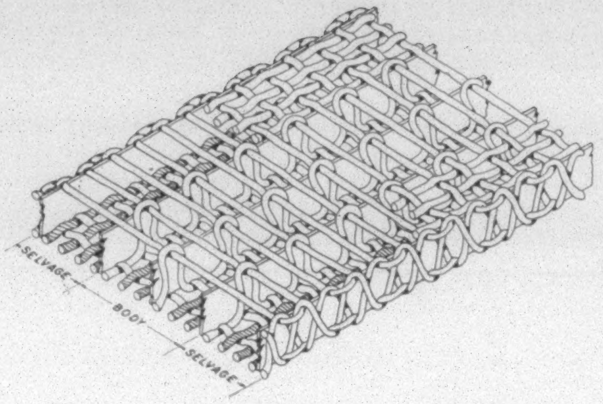

Fig. 39—A finger temple consists of a flat steel bar similar to a pile gauge wire which is inserted on the outside edges of the selvage, one on each side. Finger temples are required when pile gauge wires are used since burr temples would go through the ground fabric and hit the wires.

Temples

In weaving velour, velvet and plush, burr temples are generally used. It is hard to hold out such heavy fabrics at the reed, and a rubber or cork roller temple will not do. There are four temples used on each loom, two for the top piece and two for the bottom piece. As long as there are no pile gauge wires used, the burr temple may be used.

When pile gauge wires are needed, the burr can no longer be employed, for the pins will go through the ground fabric and hit the wires. In such a case a "finger" temple is used (see Fig. 39). This consists of a flat steel bar, similar to a pile gauge wire which is inserted on the outside edges of the selvage, one on each side. One or two pile ends weave outside this finger. Filling contraction causes the fabric to be reduced in width with a pressure to the center of the fabric. As long as the pile ends are outside the "finger" the fabric cannot come in. After the take-up roll advances the cloth past these "fingers," normal filling contraction takes place and shrinkage widthwise in the fabric occurs.

Finishing

Listed below is a typical frieze flow chart.

(1) Weave
(2) Measure
(3) Greige Inspect
(4) Pull Dummy Picks
(5) Mend and Burl
(6) Greige Storage
(7) Scour
(8) Dye
(9) Finish
    Wet-out
    Extract
    Mothproof
    Extract
    Dry
    Shear
(10) Condition or humidify
(11) Finish Inspect
(12) Color Match
(13) Roll and Wrap
(14) Ship

End Uses

Frieze is used for (a) Furniture upholstery; (b) Automobile upholstery; and (c) Lining for parkas.

The pile yarn may be mohair, for its wearing qualities. This is often too expensive, so mohair is twisted with cotton or another yarn to reduce the price.

Shearing in the finishing is rather critical. The purpose is to remove loose fibers from the surface, and to make it clean, yet the loops cannot be cut. In production, periodic

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checks must be made to see that the loops are not damaged while the fuzz is removed and a clear looking fabric is produced.

Variations

(a) Instead of having a loop every other pick as seen in Figs. 37 and 37-A, frieze fabrics may be "dressed up" as shown in Fig. 40. This fabric will have blocks of single loops and blocks of wide loops in a checkerboard motive. No cover yarn is used here. The pile extends through the backing and the fabric will be coated. An eight-pick repeat makes it possible to weave on a cam loom. The knife motion is not used.

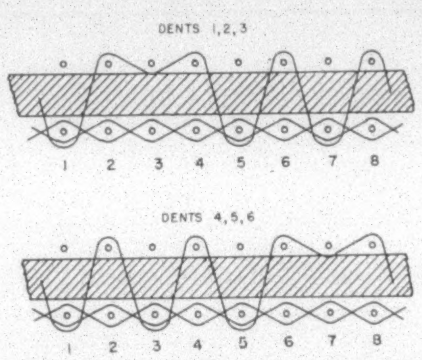

Fig. 40—Frieze fabrics may be dressed up as shown here. Instead of having a loop every other pick, it has blocks of single loops and blocks of wide loops in a checkerboard motive.

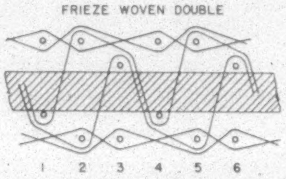

Fig. 41—To cut down on manufacturing costs, it is possible to weave a frieze fabric double, as shown in this cross section.

(b) To cut down on manufacturing costs, it is possible to weave a frieze fabric double. The cross section of such a weave is seen in Fig. 41. As the loom picks the first time, both picks are placed in the top fabric. The top pick makes the top ground fabric and the bottom pick is used to support the loop for the top fabric. The second time the loom picks, the top filling goes in the top ground fabric, and the bottom pick goes in the bottom ground fabric. The third time the loom picks, the top filling supports the loop for the bottom fabric, and the bottom filling goes in the bottom ground fabric.

It appears that one-third of the picks are lost here. For every three picks thrown, only two counted in each fabric. The other, of course, is used to make and support the loop. Thus if the customer wants 30 picks per inch in the fabric, 45 picks per inch will have to be thrown at the loom. But two fabrics are being produced, and this is cheaper than only one. In most cases low pile gauge wires are used (.030 inches). With solid rows of loops like this, and a low wire, the dummy picks are often left in the fabric. It saves the cost of removing the waste filling, adds weight to the fabric, but more important, the dummy picks give support to the loops as sold to the customer. Both fillings will be the same count, so measured filling in different yarn numbers is no problem.

Such a loom setup is not too easy to make. There are many ends as two fabrics are made. The best efficiency expected is two looms at 68%.

Although three picks are required per repeat, two repeats of the weave are put on a cam which is a total of six. This is still within the range of a cam loom. The knife motion is not used. A cover system of yarns is employed here, and the fabric need not be coated.

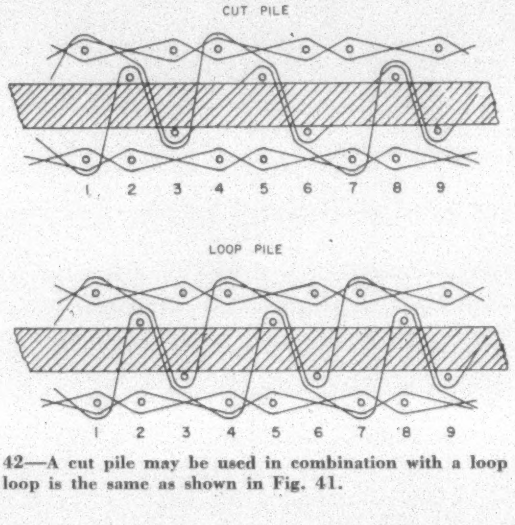

Fig. 42—A cut pile may be used in combination with a loop pile. The loop is the same as shown in Fig. 41.

(c) A cut pile may be used in combination with a loop pile as seen in Fig. 42. The loop is the same as shown in Fig. 41. The cut pile section is rather unusual. A pile end is down in the bottom piece on pick one. On pick two, it is over the wire, but not in the top piece. Pick three brings the pile end under the wire, but not in the bottom piece. It takes pick four to put the pile end up in the top piece. When the fabrics come off the wire, they will separate, the distance being the length of pile yarn from pick one to pick four. The knife motion will cut them in half.

If the pile end was down in the bottom piece on pick one and went up in the top piece on pick two, the length of pile would be approximately the thickness of the wire.

If it were woven this way, the loops too would be cut in trying to make the cut pile portion as the loop height is the thickness of the wire. The only way the cut pile can be made long enough to cut, without cutting the loops too, is to have the pile yarn make two passes around the pile gauge wire, before it goes into the opposite piece.

This fabric will require coating to anchor the cut pile, since it is made in a V tuft. A machine top or a jacquard head will be needed as the number of picks per repeat is beyond the range of a cam loom.

(d) Two sizes of loops may be made in the same fabric by the use of stationary *and* shedding pile gauge wires. A typical weave is shown in Fig. 43 with its cross section in 43A. The stationary wire forms the low loops, and the shedding wire makes the high loops. Almost any combination of low and high loops may be made, one low-three high, two high-three low, etc. A machine top or jacquard head will be required when the picks per repeat exceed eight.

The need for rocker bars can be seen here. The amount of pile yarn needed to go from pick one to pick two is much greater than the amount needed in going from pick five

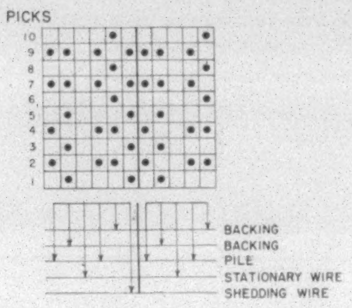

Fig. 43—Two sizes of loops may be made in the same fabric by the use of both stationary and shedding pile gauge wires. The stationary wire forms the low loops while the shedding wire makes the high loops.

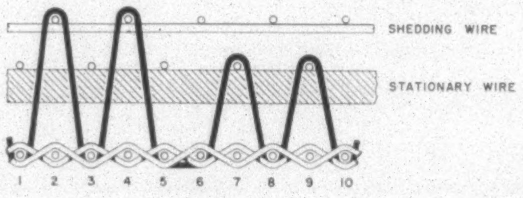

Fig. 43A—A cross section of a fabric containing both high and low loops.

to pick six. In the case of a jacquard, the pile yarn is generally in a creel at the back of the loom, with each cone or tube being free to deliver the exact amount needed for each pick.

A stationary wire is used every dent and a shedding wire every other dent. With this method of making high and low loops, only one fabric is made on the loom and the dummy picks will have to be removed. No knife motion is used. No cover yarn is employed and this would require coating if the picks per inch are low.

It is possible to weave two size loops as above and in finishing, the fabric is run through a shear. The high loops only are cut, leaving the low loops intact. This will give a cut pile and loop pile fabric.

(e) High and low loop effects may be created by varying the cover warp. In some dents a heavy cover warp, perhaps four ends of two-ply yarn, is used. This pushes the pile up into the cloth. Other dents will have only one end of a two-ply yarn for the cover. This allows the pile yarn to extend out the back. The pile delivery is the same for all ends. The height of loop in the dents having the heavy cover warp will be higher than that of the dents having the light cover warp. This method is restricted to warp stripes, but may be arranged in any manner—four high four low, six high three low, etc.

(f) A cut and loop pile in the same fabric may be made in the finishing. The starting point is a good quality mohair high loop fabric, with the dummy picks removed. After sizing and drying the entire piece, it is embossed. Under extreme pressure, some areas of loops are pushed down while other areas are left upright. In this condition the fabric is sheared, which makes cut pile out of the areas of loops remaining upright. The entire fabric is then desized and dried. All the depressed areas will come up again as loops. Unlimited designs may be put in the fabric using this method, the size of the repeat in the warp direction

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(g) One disadvantage of the double faced cut pile fabric used for inner lining in aviator jackets is its shedding property. Any cut pile fabric made of spun yarns has a tendency to lose fibers from the cut surface. In a lining for a jacket this is objectionable. MIL-C-12239 (QMC) dated September 30, 1952, covers cloth, frieze, double face, staggered loop. Fig. 44 illustrates the weave while Fig. 44A shows a cross section. It will be noted in a repeat, a single pile end weaves on one face, then another pile end weaves on the same face. If one pile end should catch and pull out, it will not leave a blank row. This will not set up as much air circulation, as if all the loops on one face were made with a single pile end.

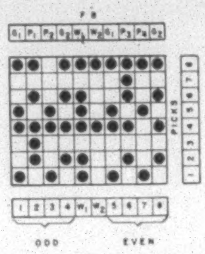

Fig. 44—This double face staggered loop weave is recommended in fabrics where shedding is a problem. In a repeat, a single pile end weaves on one face; then another pile end weaves on the same face. If one pile end should catch and pull out, it will not leave a blank row.

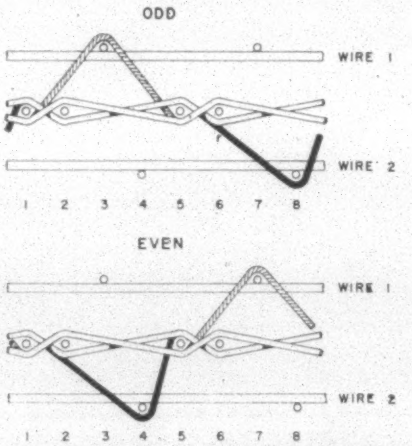

Fig. 44A—A cross section of a double face staggered loop weave.

This staggered loop construction presents impediments to air flow on and in the fabric structure, and, consequently, minimizes thermal loss through convection currents set up by normal movements of the wearer. A "row-loop" construction, on the other hand, forms channels in the surface which facilitates such air flow and heat losses.

This fabric may be made on a single shuttle loom. A pile delivery motion must be installed to accurately control the amount of pile yarn fed into the fabric. If made this way on a double shuttle plush loom, only one shuttle is used, and one fabric made at a time.

(h) A frieze with loops on both sides may be woven double on a plush loom using two shuttles. The cross section of such a weave is shown in Fig. 45. Three pile gauge wires are used here—a stationary in the center, and two shedding wires, one to make the top loops in the top fabric, and the other to make the bottom loops in the bottom fabric. The loom setup to produce this fabric is rather complicated and many ends are required for two pieces of fabric to come off at one time.

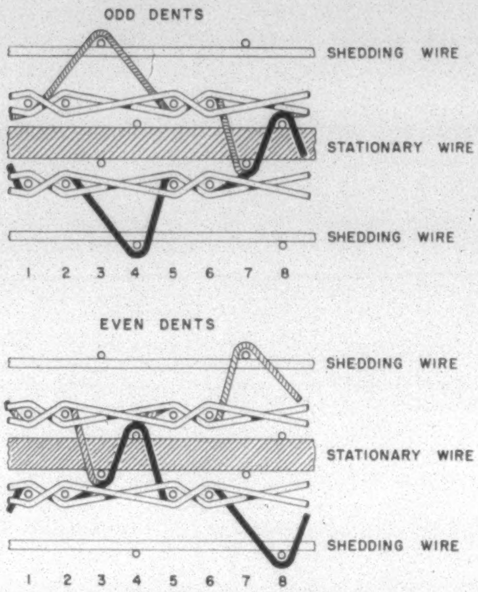

Fig. 45—This is a cross section of a frieze with loops on both sides. It may be woven double on a plush loom using two shuttles.

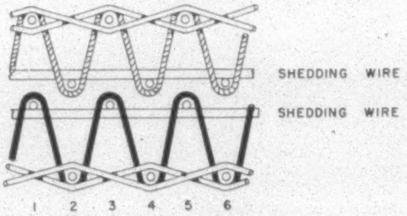

Fig. 46—This is a cross section of a weave in which two shedding wires have been used to produce two pieces of frieze on a double shuttle plush loom.

(i) Two shedding wires may be used to produce two pieces of frieze on a double shuttle plush loom. This method is shown in Fig. 46 which is the cross section of the weave. These loops are not as stable as that shown in Fig. 37. With shedding wires, it is harder to control the size and uniformity of the loops than when they are made with stationary wires.

(j) Two size loops may be woven with the use of two shedding wires and one stationary wire as shown in Fig. 47.

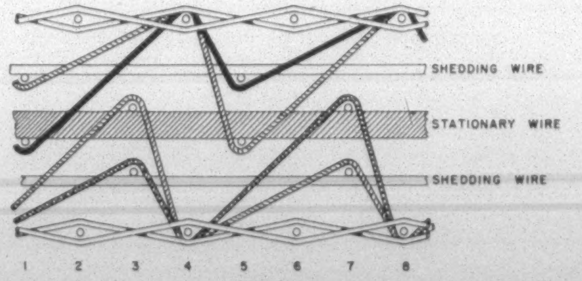

Fig. 47—Two size loops may be woven with the use of two shedding wires and one stationary wire. Each pile end will make a high loop around the stationary wire, then a low loop around the shedding wire.

Each pile end will make a high loop around the stationary wire then a low loop around the shedding wire. The height of the high loop will be governed by the size of the stationary wire, and the height of the low loop will be governed by the amount of movement of the shedding wire. The dummy picks will have to be removed and the knife motion is not used here. Such a fabric may be woven on a cam loom, as there are eight picks to a repeat. A fancy design may be made using this idea on a machine top or a jacquard.

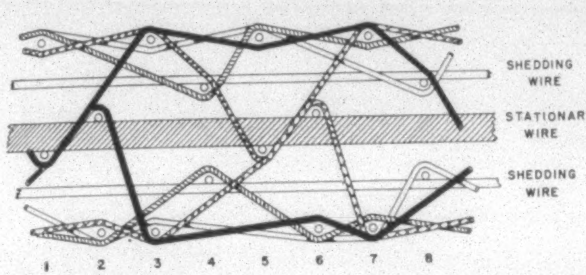

Fig. 48—Another way to make two size loops is to have one pile end making only a high loop and another pile end making only a low loop. When not making a loop, the pile end weaves in the backing.

(k) Two size loops may be made similar to (j) with one pile end making *only* a high loop and another pile end making *only* a low loop as shown in Fig. 48. When not making a loop, the pile end weaves in the backing. This makes for a heavier but more expensive fabric.

Textile Mill Failures Down In June As Compared With June 1959

In the month of June there were five failures in businesses in the classification of textile mill products, according to the Credit Clearing House, a division of Dun & Bradstreet. Liabilities of the five firms totalled $321,000. This compares with the failure of eight firms with liabilities of $1.5 million in June of 1959. For the six months through June, 39 firms with liabilities of $3.7 million failed against 32 firms with liabilities of $3.7 million in the comparable period of 1959.

June Rayon And Acetate Shipments Reported By Textile Organon

Shipments of acetate yarn by domestic producers in June totaled 26.7 million pounds, according to the *Textile Organon*, statistical bulletin of the Textile Economics Bureau Inc. In the first six months of 1960, acetate yarn shipments amounted to 127.5 million pounds, a gain of 10% over the 115.9 million pounds shipped in the corresponding period of 1959. June shipments consisted of 20.7 million pounds production and 6 million pounds drawn from inventory.

June deliveries of rayon yarn and staple totaled 60.2 million pounds, a decline of 2% compared to May. Rayon shipments in the January-June period amounted to 376.2 million pounds, or 16% less than the 449 million pounds shipped in the first six months of 1959. Acetate yarn+rayon shipments in June included 84.4 million pounds for domestic users and 2.5 million pounds for export.

June shipments of high tenacity rayon yarn amounted to 23.5 million pounds, a figure equal to the May level, but 17% below June 1959. Regular+intermediate tenacity

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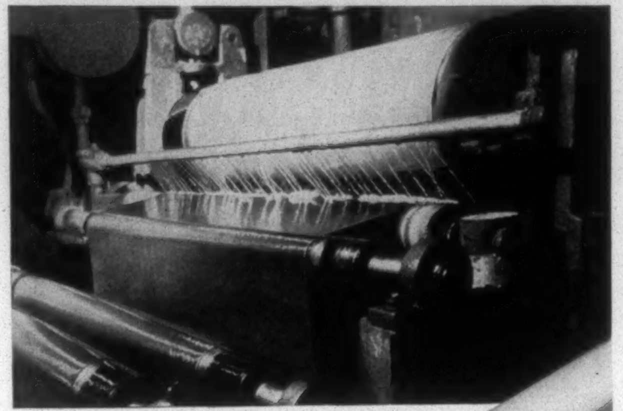

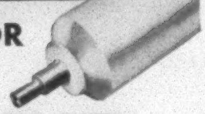

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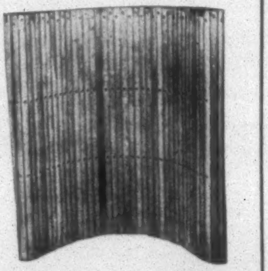

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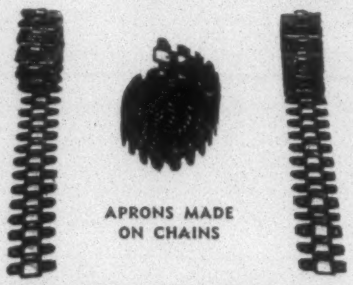

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rayon yarn shipments in June came to 11.9 million pounds, slightly off compared to May and 22% below June 1959.

Rayon staple+tow shipments in June amounted to 24.8 million pounds, a decline of 3% compared to May and 27% below the June 1959 level.

Rayon inventory in the hands of producers at the end of June were up 3.99 million pounds compared to the previous month-end.

Man-made fiber imports in May, according to the *Organon,* totalled 6.9 million pounds or 2% less than imports in April. Total imports for the first five months of 1960 amounted to 39.9 million, or 33% under the 59.6 million pounds imported in the corresponding period of 1960.

In the *Organon* compilation of imports into the U. S., West Germany continued as the most important source of rayon staple, with 1.7 million pounds in May. The next most important source was Austria with shipments here of 989,000 pounds, followed by Sweden with 892,000 pounds, Japan 538,000 pounds, Italy 500,000 pounds, Switzerland 299,000 pounds, France 293,000 pounds, Belgium 242,000 pounds, Cuba 195,000 pounds, and the United Kingdom 49,000 pounds.

Woolen And Worsted Production Shows An Increase Of 5% In The First Quarter

Woolen and worsted fabric production during the first quarter of 1960 was 73.5 million finished linear yards. This was 5% above the fourth quarter level of 70.3 million linear yards and 1% above the level of 72.5 million yards in the comparable period of 1959.

The output of women's and children's clothing fabrics at 39.5 million finished linear yards was 1% above the previous period and 9% above the first quarter 1959 level. Men's and boys' clothing fabric production at 32 million yards was 10% above the previous quarter's level but was 3% less than the output during the first quarter of 1959.

Some 72.1 million yards of the woolen and worsted fabric production were apparel fabric while nonapparel fabrics accounted for only 1.4 million linear yards.

A.A.T.C.C. Plans Annual Convention For October 6-8 In Philadelphia, Pa.

The national convention of the American Association of Textile Chemists & Colorists will meet October 6-8 at the Sheraton Hotel, Philadelphia, Pa. All convention functions, including exhibits by leading dyestuff, chemical and equipment manufacturers and the technical program, are grouped in the same area of the hotel. The technical program is being keyed to the theme "New Fibers-New Blends-New Fabrics."

U. S. Cotton Consumption Up In May

Total cotton consumption in the U. S. in May was 710,000 running bales as compared with a consumption of 708,000 running bales in April and 703,000 bales in May of 1959, according to the Bureau of the Census. Of this total some 683,000 bales were consumed in the cotton growing states and 25,000 in New England. The daily average consumption in May amounted to 36,000 bales, as compared with 35,381 bales in April and 35,168 bales in May of last year.

Foreign cotton consumption totalled 7,994 bales as compared with 7,635 in April and 7,469 bales in May 1959. Consumption of man-made fiber staple reached 36.8 million

Largest Loom Ever Shipped In Its Erected State

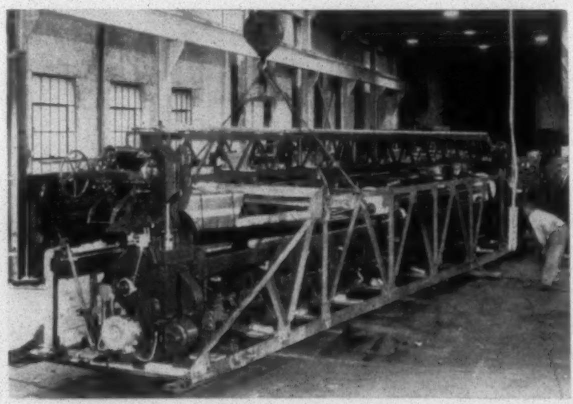
A combination of factors not available a few years ago now permit Crompton & Knowles Corp. to recommend shipping procedures that save both time and money.

The Bailey Bridge idea, borrowed from the Army Corps of Engineers, is a means of support during loading and unloading and while in transit. It, combined with outsize tractor-trailer truck equipment and today's excellent roads, makes it possible to get even mammoth woolen papermaker's felt looms into operation sooner than ever before.

For example, this 500-inch between swords, 26-harness, 3x3 box, Type F-2 loom measuring 50 feet wide by 8 feet deep by 8 feet high and weighing approximately 20 tons, is one of two such looms shipped recently from Worcester, Mass., to Appleton (Wisc.) Woolen Mills.

Special preparations having been made when the loom frame was set up, the completed loom was rocked by hydraulic jacks and lifted by a huge electric crane to permit sliding the support members of the Bailey Bridge into place beneath the loom. Overhead crane and tractor winch then combined to move the loom into a position from which it was placed on the trailer bed for shipment—the entire job consuming less than an eight-hour day.

Six days and 1,136 miles later, the loom was slid off the trailer at Appleton and winched into place in the new weave room ready for leveling and power attachments.



This mammoth woolenmaker's felt loom, measuring 500 inches between swords, is believed to be the largest loom ever shipped in erected state. Delivery from Crompton & Knowles' Worcester, Mass., plant to Appleton (Wisc.) Woolen Mills by truck took six days over 1,136 miles.

pounds in May as compared with 36.3 million pounds in April and 40.5 million pounds in May of last year.

The following table is from the Census Bureau.

COTTON, MAN-MADE FIBER STAPLE AND LINTERS
Consumption and Stocks, and Spindle Activity
MAY 1960

ALL COTTON
(Running Bales)
Total Consumption

Item	May 1960	April 1960	May 1960
United States	710,302	707,615	703,358
Cotton-Growing States	633,052	680,654	674,403
New England	24,549	24,291	25,659
Daily Average Consumption			
United States	35,515	35,381	35,168
Cotton-Growing States	34,153	34,033	33,720
New England	1,227	1,214	1,283
Index of cotton consumption adjusted for seasonal variations (1947-1949 equals 100)	104	106	103
Stocks, total	9,523,618	10,615,429	10,243,929
Consuming Establishments	1,825,980	1,961,744	1,486,713
Public Storage	7,697,638	8,653,685	8,757,216
Exports	(NA)	668,847	248,419
FOREIGN COTTON (Equivalent 500 lb. gross weight bales)			
Total Consumption	7,994	7,635	7,469
Stocks	41,934	46,143	49,088
Imports	(NA)	3,180	3,525
MAN-MADE FIBER STAPLE (Thousand Pounds)			
Total Consumption	36,868	36,345	40,474
Stocks	39,468	40,542	51,264
Imports	(NA)	5,643	8,985
COTTON-SYSTEM SPINDLES			
In Place (thousands)	19,964	19,957	20,351
Active (thousands)	19,315	19,310	19,239
Hours Operated (millions)	9,827	9,844	9,586

NA—Not available.

New Single-Bath Method Developed For Dyeing Wool-Dynel Fabrics

New single-bath procedures for dyeing blended fabrics of wool and Dynel modacrylic, which reduce dyeing time by 50% and more, have been announced by the textile fibers department of Union Carbide Chemicals Co., division of Union Carbide Corp.

Developed by Carbide's textile service laboratory in co-operation with Geigy Chemical Corp., the new methods are designed to attain good unions or cross dye effects on wool with Dynel modacrylic in blend fabrics for children's wear, skirts, sportswear, robes and others where washability is required. When combined with recommended finishing techniques, the methods give resulting fabrics high washfastness, excellent hand and dimensional stability, the company reports.

According to Carbide, the procedures eliminate the traditional and time consuming neutralizing step on carbonized fabrics prior to dyeing, and solve a primary difficulty in dyeing combinations of hydrophilic with certain hydrophobic

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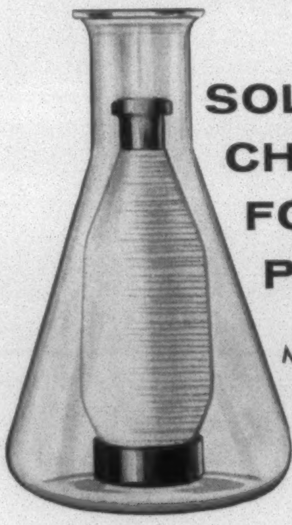

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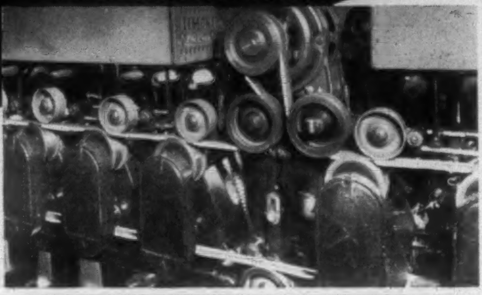

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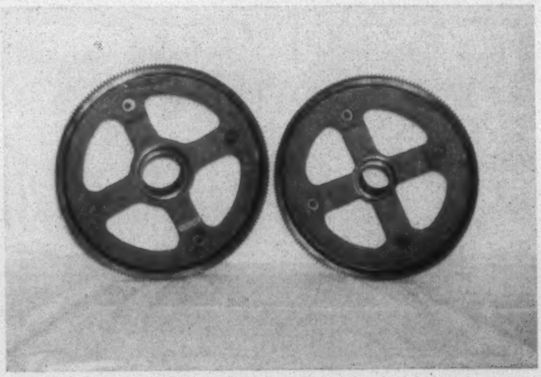

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fibers in a single bath. The problem has been that the anionic dyestuffs for the hydrophilic fibers and the cationic dyestuffs for the hydrophobic fibers are not compatible in the same bath. Dyers who have attempted single-bath methods have faced problems of precipitation, "gummy" deposits, "blotchiness" and other familiar dyehouse troubles.

The new method relies on two chemicals for a trouble-free dyeing procedure—Tinegal RWI, manufactured by Geigy, and Peregal TW, distributed by General Dyestuff Corp. Tinegal RWI insures level dyeings in an acid bath using the weak-acid or neutral wool dyestuffs. It also permits shade corrections with these dyestuffs near the boil. Peregal TW functions as an anti-precipitant, helping to maintain anionic wool dyes and cationic Dynel dyes in a finely divided state throughout the dyeing cycle.

Using the procedures in extensive mill dyeings for 70% wool-30% Dynel blends, Carbide technicians report a reduction in dyeing time from more than eight hours for a two-bath method to between 2½ and four hours for the new method.

This means that it can make possible more dyeings per shift than with the two-bath method, the company states. In addition to the gain in efficiency of men and machines, the new method is said to allow good leveling and thus to deliver better fastness on bright colored washable woolens.

Textile Quality Control Association Announces Fall Technical Program

The Fall technical meeting of the Textile Quality Control Association will be held at the Clemson House in Clemson, S. C. on September 8-9. The two-day meeting will include sessions designed to delineate the requirements of a quality control program from the points of view of several authorities in the mill-through-retailer sequence.

Highlighting the sessions will be papers on: "The Expectations of Mill Management With Regard to Quality Control," by Joseph Delany, Joanna Cotton Mills Co.; "Quality Requirements From a Retailer's Point of View," by P. J. Fynn, J. C. Penney Co.; "How Quality Control Pays Its Way," by W. M. Pittendreigh, Riegel Textile Corp.

Cotton-System Yarn Producers Showed 12% Shipment Increase In 1958

Cotton-system yarn manufacturers shipped products valued at $1.2 billion in 1958, an increase of 12% from the 1954 total of $1 million, according to the U. S. Bureau of the Census. The last previous census was taken in 1954. The industry's average employment at 76.1 million persons was down 11% from the 1954 employment total of 85.3 million persons. The 1958 payroll amounted to $204.1 million in 1958 as compared with $197.3 in 1954.

Adjusted value added by manufacture in the industry amounted to $338 million in 1958, an increase of 17% from 1954. The number of establishments with 20 or more employees was 309 in 1958, a decline of 1% from the 1954 total of 313.

Cotton Broad-Woven Fabrics Industry Shows 2% Decline In 1958 Against 1954

During 1958, manufacturers in the cotton broad-woven fabrics industry shipped products valued at $2.8 billion, a decrease of 2% from 1954, when the last census was taken, according to the U. S. Bureau of the Census. Average employment in this industry showed a decrease of 18% from 1954 to 1958 with a total of 242,500 persons employed in 1958. The 1958 payroll was $722.2 million as compared with $783 million in 1954. The value added by manufacture in the industry amounted to $1.09 billion, a decrease of 4% from the 1954 figure of $1.14 billion. The number of establishments employing 20 or more persons showed a drop of 17% in 1958 as compared with 1954. The respective figures are 397 against 476.

Cotton Yarn Imports In May Hit Lowest Level Since January

Cotton yarn imports in May showed the lowest total since January of this year, according to the U. S. Department of Commerce. The May volume of 955,492 pounds was 707,710 pounds below the April total, but 903,959 pounds above the May 1959 total. May's volume brought this year's total to 6.4 million pounds as compared with 1.3 million pounds in all of 1959.

Imports of yarn classified in the category of non-bleached, non-colored, non-combed and non-plied totalled 691,529 pounds as compared with 1,172,920 pounds in April. Imports of yarns classified in the category of bleached or dyed, single or plied, carded and combed totalled 343,963 pounds in May.

'Easy Care' Finishes Were Applied To 41% Of Cotton Fabrics In 1959

"Easy care" finishes were applied to 41% of the yardage in outlets comprising the major share of cotton's domestic markets in 1959, according to a National Cotton Council market survey released July 8. This was a 7% increase over 1958, the study points out. The report is the first comprehensive survey of the market and is entitled "Easy Care Cottons." Production of easy care fabrics during 1959 totalled approximately 3 billion linear yards, with cotton accounting for 63% of the total.

One hundred per cent synthetic fabrics accounted for 18% of the total, rayon for 13%, cotton-synthetic blends 4%, and synthetic blends 2%. An estimated 1.89 billion linear yards of easy care cottons were produced. This compares with 600 million linear yards in 1955.

"While it now appears that the rate of increase in production of resin finished cotton fabrics is leveling off, current interviews with cutters and retailers indicate that the growth

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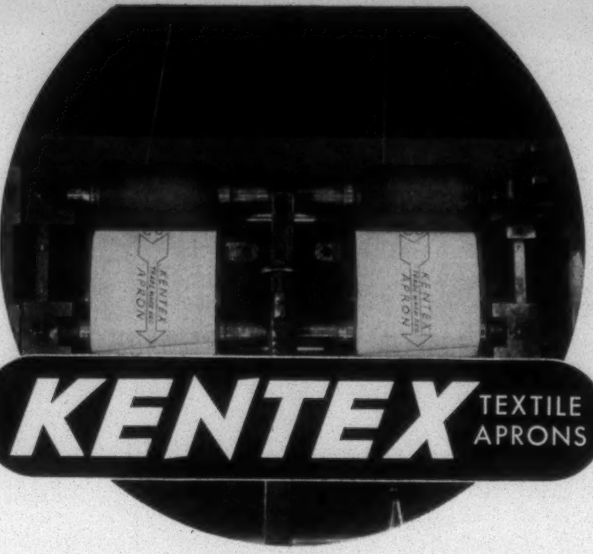

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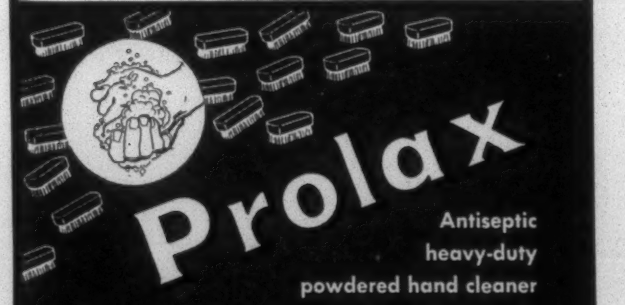

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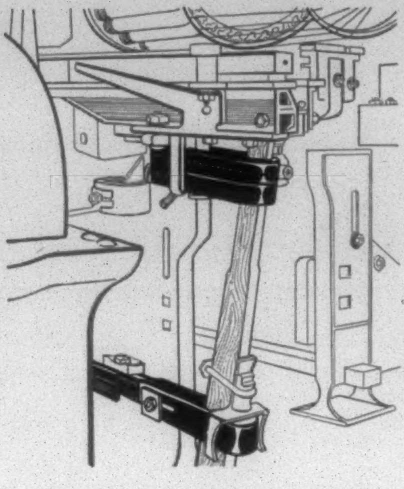

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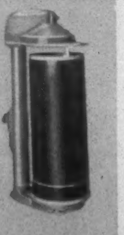

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trend is still upward," the report points out. "Furthermore, a leveling off in production suggests that consumers are waiting for further improvements in easy care qualities rather than that the demand for easy care products has been saturated."

In terms of square yards, resin finished cottons in apparel uses totaled 1,625.7 million in 1959, while consumption in household uses reached 435.4 million. Women's and misses' apparel accounted for 772.8 million square yards; men's and boys', 650.5 million; and clothing for girls, children and infants, 202.4 million. Apparel and household uses in 1959 accounted for 81% of the total consumption of cotton. Approximately 52% of cotton consumption is in apparel uses and cotton's percentage of the total fiber use in this market increased from 56% in 1947 to 61% in 1959.

An analysis of fiber consumption and of consumer likes and dislikes in uses accounting for about 90% of the total cotton consumption in this country indicates easy care qualities are desirable in outlets accounting for almost 7.25 billion square yards of fabrics annually. This indicates that these qualities now figure in more than half the total domestic consumption of broad woven fabrics. Woven fabric consumption in 1959 in uses where easy care qualities are important totaled 7,228 million yards—5,260 million for cotton and 1,968 million for other fibers.

Cotton accounted for 73% of the total consumption of woven fabrics featuring easy care qualities, indicating that: (1) easy care qualities would strengthen cotton against competitive losses in outlets now accounting for about 5.25 billion yards annually; (2) satisfactory easy care qualities would help cotton achieve competitive gains in uses consuming about two billion square yards of competing materials; (3) the annual demand for chemicals or other products to process textiles for easy care qualities is equivalent to the quantity of materials needed to process 7.25 billion square yards; and (4) demand for easy care qualities is distributed among wide segments of both apparel and household uses.

Single copies of "Easy Care Cottons" are available free from the Market Research Section, Utilization Research Division, National Cotton Council, Box 9905, Memphis 12, Tenn.

Cotton Research Clinic

(Continued from Page 44)

and aid to grade and staple classification. This is the use being made of laboratory tests by the Cotton Division in its standardization and classing program on an ever widening scale. In fact, much of the pioneering work in the development of fiber testing methods originated in the department's cotton standardization laboratories, as far back as 1927 when the Cotton Division established its fiber testing and color laboratories because, even then, they realized clearly that grade and staple do not explain sufficiently well the total contribution of various fiber properties to spinning performance and product quality of cotton.

The information presented today, based on tests made over the past 13 years, contributes to our understanding of quality evaluation by making it clear that grade and staple still provide a good "first approximation" to cotton quality evaluation; although they do not cover, nor have they ever covered, several of the important fiber properties needed to predict more fully the spinning quality or use-value of cotton.

Promotions, Resignations, Honors, Transfers, Appointments, Elections, Civic and Associational Activities

PERSONAL NEWS

Smith

J. L. Hunter

Rankin

R. C. Hunter

Four new appointments at district sales offices have been announced by American Enka Corp., New York City. Douglas W. Smith, Joseph L. Hunter and Wiley T. Rankin have been named sales representatives. Robert C. Hunter assumes the duties of technical representative. Smith and Robert C. Hunter are assigned to the New York district sales office. Rankin has been assigned to the Providence, R. I., district sales office and Joseph L. Hunter to the company's district sales office in Chattanooga, Tenn. Rankin and Robert C. Hunter have been serving as members of the Enka technical service department and Smith was formerly technical representative in the New York office. Joseph L. Hunter previously was with American Viscose Corp.

John C. Fay, vice-president and comptroller of Avondale Mills, Sylacauga, Ala., has been elected to membership in the Controllers Institute of America, a non-profit organization of controllers and finance officers from all lines of business.

James A. Lindsey has been named to the newly created position of technical supervisor for the Trion Division of Riegel Textile Corp., Trion, Ga. Lindsey will work with both the greige mill and the dyeing and finishing plant. He joined Riegel in 1956 as a trainee following his graduation from Auburn.

Frank J. Fitzgerald has been appointed vice-president and manager of manufacturing of Celanese Fibers Co., succeeding David Taylor, who recently was named president of Celanese Plastic Products Co. Both companies are divisions of Celanese Corp. of America. For the past two years, Fitzgerald had served as plant manager of the Celanese fibers plant in Rock Hill, S. C. . . . Harlan M. Trammell, for the past two years plant manager of the Celanese fibers plant in Narrows, Va., succeeds Fitzgerald in the Rock Hill post. . . . W. J. Cramer, production manager at Narrows since 1957, becomes plant manager.

William W. Deupree has been named manager for the Central and Southeastern territories of Anderson, Clayton & Co. Deupree has been with the company since 1927 and since 1955 has been assistant territory manager. In his new post he succeeds M. A. Woolen, who has resigned.

J. Carl Park Jr. has been named vice-president and general manager of the Signal Thread Co., Chattanooga, Tenn. Park succeeds Herbert D. Upham, who has been named executive vice-president. Park was previously manager of production and planning control, and head of the cost department of Dan River Mills, Alabama division.

Merwin R. Haskel, president of the United Merchants & Manufacturers Inc., has been named chairman of the New York Heart Fund for 1961. Haskel has been active in the textile division of the Heart Fund for the past seven years, serving as chairman for three years.

Wilkinson

Vernon L. Wilkinson has joined Curtis & Marble Machine Co., Worcester, Mass., and will be in charge of co-ordinating improvements and modernization of existing machinery, as well as planning new product developments for diversification. Wilkinson has been with Rodney Hunt Machine Co. of Orange, Mass., for the past 16 years. He is an honor graduate of Lowell Technological Institute where he majored in textile engineering.

John D. McPherson has been elected president and a director of Jefferson Chemical Co., Houston, Tex. He will succeed George R. Bryant, who is retiring from active service effective July 31. McPherson has been with Jefferson since 1955 when he joined the company as vice-president in charge of operations. In 1958 he was elected executive vice-president. . . . George R. Bryant joined Jefferson in 1955 as president and member of the board. He previously served as a vice-president of Texaco Inc.

Stribling

Thomas E. Stribling Jr. has been named director of research by Werner Textile Consultants, New York City. He succeeds the late Stephen I. Rudo, who headed the research department in Larchmont, N. Y., during the past 11 years. Stribling joined Werner in 1952, serving as a senior engineer on assignments in the U. S., Canada and Europe. Prior to joining the consulting organization he was technical superintendent with Dan River Mills. Stribling holds a B. S. degree in textile engineering from Clemson College. He also attended the Graduate School of Business at Columbia University.

Celanese Corp. of America, New York City, has announced the reorganization of certain division operations and the appointment of two new executive vice-presidents and of four new division presidents. Named executive vice-presidents were John W. Brooks and Richard W. KixMiller. Brooks and KixMiller were both previously corporate vice-presidents. Brooks, who has been with the company since 1955, was in charge of the fibers division and will now have charge of the fibers and plastics products companies. KixMiller, who joined Celanese in 1946, was in charge of the chemical and plastics divisions and will now have directional responsibility for the chemical and Polychem companies. . . . The new division presidents are: Peter H. Conze, with Celanese since 1956, formerly vice-president of the Celanese Fibers Co., now president. . . . William P. Orr, with the company since 1945, formerly vice-president of Celanese Plastics Products Co., now president of Celanese Polychem Co. . . . David Taylor, with the company since 1942, formerly vice-president and manager of manufacturing of the fibers company, now president of the plastic company. . . . James H. Worth, with Celanese since 1953, formerly vice-president of the chemical company, now president.

Eleven Southern mill men recently completed the intensive two-weeks course in woolen yarn manufacture at Lowell Tech, Lowell, Mass. They are Harold L. Chambers of the Greenville, Miss., division of Mohasco Industries; James L. Crowe and J. W. Kirby, Excelsior Mills, Union, S. C., and William E. McDaniel of Excelsior Mill No. 3 in Rutherfordton, N. C.; Graham Denton, John R. Hutcherson and Homer Thompson, Hatch Mill, Columbus, N. C.; Euell Herring of Huyck Felt Co., Aliceville, Ala.; and Curtis R. Hutcherson, Howard L. Taylor and Joe Webb, Kingstree (S. C.) Mfg. Co.

Danold B. Tansill has been named president and chief executive officer of the Firth Carpet Co., Firthcliffe, N. Y. Tansill succeeds Harold E. Wadely, who will continue as chairman of the board. Tansill's past positions include those of chairman and president of M. Lowenstein & Sons, and vice-president of Burlington Industries and of Pepperell Mfg. Co.

Dolan B. Frye has been named general superintendent of Wiscassett Mills Co., Albemarle, N. C., succeeding Thomas M. Denning, who has retired. Denning had served as superintendent since 1900. . . . John M. Morrow has been named superintendent of the mill. . . . Charlie R. Marshall has been named assistant superintendent for Mill No. 6 and the quality control laboratory.

Walters

Royden Walters, executive vice-president and general manager of Saco-Lowell Shops, has been elected to the company's board of directors. Walters was elected to fill the vacancy created by the death of John E. Johnson. He first joined Saco-Lowell in 1958 as executive assistant to the president; was made vice-president in February 1959; executive vice-president in September of the same year; and general manager in June of this year.

Dr. Herbert F. Schiefer, chief of the textile section of the National Bureau of Standards in Washington, D. C., has been named chairman of Committee D-13 on Textiles of the American Society for Testing Materials. . . . Prof. David S. Hamby of the School of Textiles of North Carolina State College was named first vice-chairman of the committee. . . . B. S. Sprague, head of fiber physics and evaluation research of the Summit, N. J., laboratory of Celanese Corp., has been named second vice-chairman. . . . M. C. Bullock of the textile division of B. F. Goodrich Goodrich Co. was named to the new post of third vice-chairman of the textile committee.

Dr. Frank H. Reichel Jr. has been named director of corporate research responsible for the development of new products at American Viscose Corp., Philadelphia, Pa.

Julian M. Rivers has been named comptroller of J. P. Stevens & Co. to fill the vacancy caused by the resignation of W. T. Stockton, effective August 1. Rivers joined Stevens in 1949. He was named assistant comptroller in 1959.

Heard

M. Earl Heard Jr. has been promoted to assistant to the vice-president of the Saco-Lowell international division. Since 1956 Heard has been sales engineer in the Atlanta, Ga., district sales office of the Saco-Lowell textile machinery division. Prior to that time he had been associated with the West Point (Ga.) Mfg. Co.; the Southeastern Engineering Co., West Point; and the Tritex Corp., Lanett, Ala.

Alfred G. New, treasurer of Gaffney (S. C.) Mfg. Co., has been named vice-president and general manager of the Lockhart plant of Monarch Mills at Lockhart, S. C. . . . I. S. Pitts Jr. has been named vice-president of Monarch. Gaffney and Monarch are members of the Deering Milliken group of mills.

George F. Watson has been promoted to superintendent of Fulton Cotton Mills, Atlanta, Ga. Watson had been acting superintendent. He joined the company in 1957.

J. Floyd Smith has joined the Chemstrand Corp. as staff director of marketing coordination. Prior to joining Chemstrand, Smith was vice-president for marketing for the Firth Carpet Co. with headquarters at New York City from 1956 to 1960.

Three new vice-presidents have been appointed to the corn refining division of Penick & Ford Ltd. They are Dr. J. E. Killinger, vice-president of technical sales service and field development; Dr. C. C. Kesler, vice-president of research and development; and S. H. Foster, vice-president of production. All three men will make their headquarters at the Cedar Rapids, Iowa, plant.

George F. Watson has been named superintendent of Fulton Cotton Mills. He has been serving as acting superintendent. Watson holds a B.S. degree in textile manufacturing from North Carolina State College. He joined Fulton in 1957 as assistant superintendent.

Dr. Ralph T. K. Cornwell has been named technical assistant to the president of American Viscose Corp. In his new position, Dr. Cornwell will be located in the Philadelphia headquarters office handling special project assignments. For the last 14 years, Dr. Cornwell has been director of research for the corporation's film division.

Edmund Vergara has been appointed as credit manager for the dyestuff, chemical and pigment divisions of Sandoz Inc., New York City. Vergara, who was formerly with the treasury division of The American Cyanamid Co., succeeds Harry R. F. Goeldlin, who has resigned.

Thomas J. McGann, vice-president of James Talcott Inc., has been named to head the company's factoring division, and has been appointed to the firm's executive committee. He succeeds the late Joseph A. Amato, who died recently.

Thomas L. Carver has been appointed staff manager for weaver sales for Johns-Manville, Toledo, Ohio. His new duties include product responsibility for glass yarns and rovings for the weaving industry and management of sales planning and merchandising policy.

Lotz

Dr. Edwin L. Lotz has been named vice-president in charge of research and development of Hess, Goldsmith & Co., a division of Burlington Industries. Dr. Lotz joined the company in January 1955 as general manager of Glass Fabrics Finishing Co., Cedar Grove, N. J., a division with responsibilities in the area of research. In 1957 he was named research director of the firm in addition to his duties as general manager of Glass Fabrics Co.

Coy H. Hamilton has been named assistant manager of Coats & Clark's Albany, Ga., mill. Hamilton joined Coats & Clark in 1953, and went through the firm's comprehensive training program in which he studied all phases of manufacturing at six of its textile mills.

Karl Klomparens has been named industrial sales manager at Diamond Crystal Salt Co., St. Clair, Mich. Klomparens had been technical director since joining the company in 1955. In his new position, he will coordinate sales efforts in the textile field.

Sanford L. Cluett, an 1898 graduate of Rensselaer Polytechnic Institute, has been elected an honorary trustee of the institute in appreciation of his many years of service. Cluett was chosen a life trustee in May

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1919. He was secretary of the board from 1922 to 1932 and vice-president from 1932 until June of this year when he requested inactive status. Cluett, vice-president of Cluett, Peabody & Co., is the inventor of the Sanforized process for the compressive shrinking of cloth.

Laun

Louis F. Laun has been appointed vice-president and director of marketing of Celanese Fibers Co. He succeeds Peter H. Conze, who recently was named president of the company, a division of Celanese Corp. of America. Laun joined Celanese in 1957 as general merchandising manager. Prior to that he had worked for Burlington Industries Inc., for two years as director of advertising and branch office sales. . . . Laurence T. Gerrity succeeds Laun as general merchandising manager. Gerrity, who joined Celanese in 1945, served for the past 18 months as director of textile marketing of Celanese Mexicana, S.A., an affiliated company, in Mexico City.

Robert G. Belknap has been named staff representative for the rubber and textile sections of the National Safety Council. Belknap was with Bemis Bro. Bag Co. for 11 years before joining the council. He will be liaison man between the council staff and officers of the rubber and textile sections. He also will be technical advisor to council member firms in the rubber and textile fields.

William G. Sumner has been promoted to the position of sales engineer at the Chattanooga, Tenn., branch office of the dyestuff and chemical division of General Aniline & Film Corp., New York City. Sumner has been associated with General Aniline in the dyestuff and chemical division since 1953.

John C. Wade has beeen appointed sales representative in the Louisiana territory for Stanley Steel Strapping, division of The Stanley Works, New Britain, Conn. The Louisiana territory includes parts of Florida, Mississippi, Alabama and all of Louisiana. Wade was previously associated as an engineer-estimator for the Continental Gin Co., Birmingham, Ala., for six years.

I. Clifford Smith has been named a sales representative of American Cyanamid Co.'s fibers division in its Southern sales district. Smith will handle sales of Cyanamid's Creslan acrylic fiber to all segments of the textile industry. He will cover the area south of Charlotte, N. C.

A. W. Schubert has been named president of Emery Industries Inc., succeeding John J. Emery, who takes over the newly-created post of chairman of the board. Schubert formerly was executive vice-president.

Arthur B. (Skin) Edge III, assistant superintendent of the Hillside plant of Callaway Mills Co., LaGrange, Ga., has been promoted to superintendent. Edge is a graduate of Georgia Tech with a B. S. in textiles. . . . John Tice, plant engineer at the Hillside plant, has been promoted to assistant superintendent of finishing. He is a graduate of Clemson with a B. S. in textile manufacturing and has been with the company since 1955. . . . Kenneth Nelms, trainee, has been promoted to quality control supervisor of the Hillside plant. Nelms received his B. S. degree in textile manufacturing from Clemson College and has also studied accounting at the Southern Business University in Atlanta. . . . Gary Keeble has been promoted to plant engineer at Hillside. He joined the company as a trainee at the Unity spinning plant in August 1959. He received his B. S. degree in textile engineering from Georgia Tech.

Robert W. Philip has retired as vice-president of Callaway Mills Co., LaGrange, Ga. Philip joined the company in 1947 when the Callaway Institute, of which he was president, became the research division of Callaway Mills. At that time he was named vice-president, director of research and a director of the company. In 1959 he was made assistant to the chairman of the board. He has been active in a number of organizations including the American Association of Textile Chemists & Colorists and the Textile Operating Executives of Georgia.

Jesse W. Stribling, sales manager, Leesona Corp., retired May 1. Stribling joined the company in 1925 and, except for two years when he served as editor of *Cotton*, was in charge of the company's Atlanta office until he was made sales manager in 1956. He was closely identified with the promotion of the Unifil loom winder.

Dalton

Harry L. Dalton has retired as vice-chairman of the board of American Viscose Corp. Dalton joined the firm in 1925 as its first salesman in the South. In 1946 he was named to the board and assumed supervision of the Southern sales area. He became director of sales and public relations in 1948. He was named vice-chairman of the board in 1955.

Donald C. Johnston, general manager of the Northern group of the woolen and worsted division of J. P. Stevens & Co., has been named assistant executive officer of the division. Johnston joined the company in 1947 and was named to his present post in 1959. . . . John F. Matthews has been named to succeed Johnston as general manager of the Northern group. Matthews joined the company in 1950 as assistant manager of the engineering department of the woolen and worsted division. . . . Maurice Phillips succeeds Matthews as assistant general manager of the Northern group. Phillips joined Stevens in 1955 as assistant superintendent of the Franklin, N. H., plant. He was previously in charge of blends and fabrication.

David H. Fields, assistant director of research of the American Thread Co., Willimantic, Conn., has been named director of research, succeeding Howard D. Corkum, who has retired. Fields, a chemical engineering graduate of Yale University, joined the company in 1949 and was named to his present post in 1959. Corkum, who joined the company in 1943, will continue to serve the company as a consultant.

Collette

Virgil Collette has joined the Dixon Corp., Bristol, R. I., as a steel roll salesman. He was formerly sales representative for the Piedmont Machine Shop in Gastonia, N. C., and prior to this had been associated with various textile shops in the Gaston County, N. C., area for over 25 years. He will concentrate on steel roll sales to spinning mills throughout North and South Carolina.

John H. Sanders has been named sales manager of the chemicals division of Eastman Chemical Products Inc., Kingsport, Tenn. Eastman Chemical is the marketing subsidiary in the U. S. and Canada for products manufactured by Tennessee Eastman and Texas Eastman company divisions of Eastman Kodak Co. Sanders has been connected with Eastman since 1946. Prior to his promotion he was a regional sales manager.

Leonard S. Little has been named recipient for the 1960 Harold C. Chapin Award of the American Association of Textile Chemists & Colorists. The award will be presented to him at an awards luncheon to be held October 7 during the association's national convention at the Sheraton Hotel, Philadelphia, Pa. The A.A.T.C.C. presented the first award in 1959 to Dr. Chapin for whom the service award was named. It

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is presented annually at the A.A.T.C.C. national convention to a senior member of at least 20 years continuous membership, who has contributed outstanding service in enabling the association to attain the objectives for which it was founded. The selection of the recipient is the unanimous choice of a committee consisting of one member from each of the four National Regions of A.A.T.C.C.

OBITUARIES

Harold M. Chase, 88, research chemist at Dan River Mills and recipient of the 1948 Olney Medal of the American Association of Textile Chemists & Colorists, died July 6. Mr. Chase had been connected with Dan River since 1917 when he joined the firm as chemist and assistant superintendent of dyeing. He was named director of research in 1937. He retired in 1949 but was retained as a consultant in dyeing and finishing until the time of his death. Several nieces and nephews survive.

Harvey Eastman, 52, former manager of the American Thread Co. plant near Marion, N. C., died recently in Georgia ot a heart attack. Mr. Eastman served as manager of the plant from 1952 until 1957. For the past few months he had been with the York Southern Co. in York, S. C. Survivors include his widow and two daughters.

Walter H. Glenn, 54, retired manager of Glendale Mills, Sptartanburg, S. C., died June 15. Mr. Glenn had served as manager of the mill for three years. Previously he had managed Camperdown Mills, Greenville, S. C. Survivors include his widow and a son.

A. Stanley Llewelyn, 73, retired textile executive, died July 4 at his home in Camden, S. C. Mr. Llewelyn had served as superintendent of Wateree Mill in Camden and as an executive with Inman (S. C.) Mills.

James M. Scott, 50, general plant manager and treasurer of Scott Testers Inc., Providence, R. I., died June 19 aboard his cabin cruiser. Mr. Scott had also been a director and assistant treasurer at the American Textile Co., Pawtucket, R. I.

Felix A. Tagliabue, 61, president and owner of Palisades Dyeing Corp., Peace Dale, R. I., died July 11 at a medical center in Long Branch, N. J. Mr. Tagliabue had been connected with the textile dyeing and finishing industry for more than 40 years. He had been associated with Dixie Dye Works, Emporia, Va.; Northern Dye Works, North Bergen, N. J.; and United Piece Dye Works, Los Angeles. His widow and a daughter survive.

mill news

CONSTRUCTION. NEW EQUIPMENT. FINANCIAL REPORTS. CHARTERS. AWARDS. VILLAGE ACTIVITY. SALES AND PURCHASES

CHERAW, S. C.—Land clearing has begun here for a new mill of Burlington Industries Inc., which is expected to cost $6 million. Burlington has purchased about 83 acres. It is reported that the plant will contain some 350,000 square feet of space.

RAEFORD, N. C.—The Raeford Plant of Pacific Mills, division of Burlington Industries, has been awarded a contract by the Military Clothing & Textile Supply Agency of the Philadelphia Quartermaster Depot. The contract calls for 750,000 linear yards of 15-ounce wool serge cloth of 56" width at $1.9 million.

NEW YORK, N. Y.—Collins & Aikman Corp. here had a small decline in net earnings in spite of a 31% increase in sales for the first quarter as compared with the first quarter of the previous fiscal year. For the quarter ended May 28 net profit was $211,000 against $217,000 in 1959. Sales for the period totalled $13.8 million against $10.5 million in the comparable period of 1959.

ALEXANDER CITY, ALA.—Russell Mfg. Co. reports sales of $29 million for its latest fiscal year, a gain of $3 million over the previous year. During that time the company produced 23 million garments, 18.9 million pounds of yarn and 28.7 million square yards of cloth. Some 58 million yards of material were processed at its bleachery. Employment presently totals 3,700, an increase of 300 over last year. The company said it plans to continue to expand its operations during the coming year.

ROCKINGHAM, N. C.—The Martha Baum worsted mill of J. P. Stevens & Co. has gone into operation and is producing men's worsted suiting. The plant's output will go to the Forstmann and Hockanum lines of the company. Stevens purchased the building in August of 1959. The basic installation includes one card, one Warner & Swasey pin drafter, 216 deliveries of Whitin Quick-set roving, 7,200 spindles of Roberts worsted system spinning, 1,440 spindles of Roberts twisting and 64 Crompton & Knowles Model W3A looms.

NEW YORK, N. Y.—Reeves Bros. Inc. reports substantial improvement in the fiscal year ended July 2. Sales for the period are expected to run between $70 and $73 million as compared with $62 million in 1959. Earnings are expected to be double last year's total of $974,000.

PHILADELPHIA, PA.—The Military Clothing & Textile Supply Agency of the Philadelphia Quartermaster Depot has awarded two contracts for cotton duck cloth. The Graniteville Co. of Augusta, Ga., received a contract for 1.4 million yards of 36" duck at $221,000. West Point (Ga.) Mfg. Co. was awarded a $55,000 contract for 50,000 yards of 60" duck cloth.

NEW YORK, N. Y.—Indian Head Mills reports earnings of $1.4 million on sales of $30.7 million for the six months ended May 28 as compared with earnings of $1.2 million on sales of $27.2 million in the comparable period of 1959. The 1960 figures reflect the operations of the Hoosac Mills Division and the USF-Arnold Finishing Co., both acquired during the year. Results of the Bernhard Ulmann Co. acquisition in May are not reflected. These three acquisitions are expected to add approximately $25 million per year of volume to the company's sales potential.

FAIR LAWN, N. J.—Fair Lawn Finishing Co. has been purchased by Industrial Products of America for a reported $1 million. Industrial Products buys and liquidates plants. It is reported that Fair Lawn will either be sold as a going concern or liquidated with the machinery and equipment being disposed of in lots. Several firms are reported to be interested in purchasing Fair Lawn.

KANNAPOLIS, N. C.—Cannon Mills Co. here has started construction on a 43,000-square-foot building to house its yarn dyeing facilities. The new structure will have a full basement and main floor.

NEW YORK, N. Y.—The Kendall Co. and the American Bleached Goods Co. have entered into a contract for the joining of the business operations of American Bleached Goods with Kendall's textile division. Paul T. Chave, executive vice-president of the American Bleached Goods Co., will head the American Bleached Goods Department of Kendall. Associated with him will be James A. Fisher, a vice-president of American Bleached Goods, and other personnel from that company.

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textile bulletin

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TEXTILE BULLETIN is devoted to the dissemination of information and the exchange of opinion relative to the spinning and weaving phases of the textile industry, as well as the dyeing and finishing of yarns and woven fabrics. Appropriate material, technical and otherwise, is solicited and paid for at regular rates. Opinions expressed by contributors are theirs and not necessarily those of the editors and publishers. ¶ Circulation rates are: one year payable in advance, $1.50; two years payable in advance, $2.00; one year, Canada, $3.00; one year, other countries in Postal Union, $5.00; single copies, 25 cents. ¶ A companion monthly journal, THE KNITTER, is published by Clark Publishing Co. and devoted to the interests of the knitgoods manufacturing industry.

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Another Dead End

THE textile industry bumped into another dead-end June 27 in its search for a way to protect the jobs of its workers and the investments of its stockholders. By ruling that cotton textile imports are not interfering with the federal government's cotton export subsidy program, the U. S. Tariff Commission maintains the Eisenhower Administration's unwavering attitude toward free trade at whatever the cost.

In reacting to the commission's findings, spokesmen for various textile trade associations have concluded, in effect, that domestic manufacturers have again been sold down the river. That's just about what it amounts to no matter how else you try to describe it. Yet looking back at the way this latest appeal was approached, it is obvious that there wasn't any real hope down this particular road anyway.

To begin with, President Eisenhower's request to the Tariff Commission to hold hearings on Section 22 of the Agricultural Adjustment Act arbitrarily confined the scope of the study to a very limited scale. The commission was instructed to do no more than answer one question: Is the importation of cotton textiles hurting the Government's cotton export subsidy program? By a 4-to-2 majority the commission concluded that the more cotton textiles are imported into the U. S. the more U. S. cotton will be needed by the exporting foreign manufacturers. Following that sort of logic, the best thing that could happen to the cotton industry in this country would be to have all U. S. mills close down. Then we could import all our textile products, and export all our cotton.

The big gripe, and the very legitimate gripe, directed at the study of the Tariff Commission is this. Never before in appeals of this sort has the White House limited the commission in its study of an over-all problem. Apparently the Administration was determined that the Tariff Commission would find nothing that could not justify the Administration's continuing stand.

As Senator Sam Ervin of North Carolina described it on the Senate floor, ". . . it (the commission study) is like the case of a man who goes to a doctor for a complete physical examination. The doctor examines his little toe, and diagnoses the condition of the man's lungs, heart and all of his other organs on the basis of the condition of his little toe."

That's true enough in this instance. But over the long haul the Administration and the State Department have more nearly examined all the vital organs and pronounced the toe fit. Neither diagnosis will help the patient.

What can be done about it? Where does the industry go next?

The only road yet to be traveled leads to Congress. That's what it boils down to. And that's an uphill road all the way. The textile industry doesn't appear now to have the necessary strength to make it on its own. It will have to be joined by other industries which are also losing customers, workers and investments to the growing list of exporting low-wage nations. The pinch is already becoming a squeeze in certain industries—steel, plywood, autos, shrimp, to name a few—but a joint push still seems a long way off. By all indications things are going to get a lot worse before they get even a little better.

Despite this gloomy prospect, we hope it's obvious to all concerned there is still much the industry can do to avoid another period of profitless prosperity in the months ahead. If the currently improved balance between capacity and consumer demand can be maintained, the long term outlook remains good even if temporary soft spots crop up as predicted here and there in the year ahead.

Index to Advertisers

Adolff, Emil —
Akron Spool Mfg. Co. —
Allen Beam Co. —
Allen Co. —
Allied Chemical Corp. (Solvay Process Div.) 69
American Cyanamid Co. (Fibers Div.) 56
American Moistening Co. 12
American Viscose Corp. —
Anheuser-Busch, Inc. (Corn Products Div.) 43
Antara Chemicals Div. of General Aniline & Film Corp. —
Armstrong Cork Co. 10 and 11

Bahan Textile Machinery Co. Front Cover
Bahnson Co., The 5
Barber-Colman Co. —
Barkley Machine Works 71
Batson Co., Louis P. —
Bendix Aviation Corp. (Eclipse Mch. Div.) —
Bullard Clark Co., The —
Burkart-Schier Chemical Co. 72

Carolina Brush Co. —
Carolina Loom Reed Co. —
Carter Traveler Co. (Div. of A. B. Carter, Inc.) —
Celanese Corp. of America —
Chemstrand Corp. —
Clinton Corn Processing Co. 8
Cluett, Peabody & Co., Inc. —
Cocker Machine & Foundry Co. 4
Corn Products Sales Co. —
Crompton & Knowles Corp. 60
Cronland Warp Roll Co., Inc. —
Curtis & Marble Machine Co. —

Dary Ring Traveler Co. 69
Davis, A. Benson (Ben) 79
Dayco Textile Products Co. 6 and 7
Dickson & Co., Inc., W. K. 79
Dillard Paper Co. 31
Dixon Corp. 2
Dolge Co., The C. B. 71
Draper Corp. 16 and 17
Dronsfield Bros., Ltd. 52

Eagle Roller Repair Co. 79
Eaton Mfg. Co. (Dynamatic Div.) —
Electro-Mechanical Engineering Co. 44
Extremultus, Inc. —

Fabrionics Corp. —
Ferguson Gear Co. —
Ferguson & Associates, John 79
Foster Machine Co. (Lindly Div.) —
Foster Machine Co. —

Gaston County Dyeing Machine Co. —
Gates Rubber Co., The 9
General Asbestos Rubber Div. of Raybestos-Manhattan, Inc. 67
General Dyestuff Co. Div. of General Aniline & Film Corp. —
Geigy Dyestuff Div. of Geigy Chemical Corp. —
Georgia-Carolina Oil Co. —
Graton & Knight —
Griffin Sons, Inc., Ira L. Back Cover

Hallman, Rullie L. 79
Hart Products Corp. —
Herr Mfg. Co., Inc. —
Holyoke Machine Co. —
Howard Bros. Mfg. Co. —

Ideal Industries, Inc. 20 and 21
Ideal Machine Shops, Inc. —
Industrial Coatings, Inc. —
Interlock Screw & Bolt Co. —

Jacobs Mfg. Co., The E. H. (Northern and Southern Divisions) —
Johnson Corp., The —

Keever Starch Co. 48
Kirkman & Dixon Mchry. Co. 74
Kluttz Rings, Inc. 65
Koppers Co., Inc. —

Laurel Soap Mfg. Co., Inc. 63
Leesona Corp. —
Livermore Corp., H. F. —
Long Spindle & Machinery Co. —
Loom Products Co. —
Loper Co., Ralph E. 69

Manhattan Rubber Division 67
McDonough Power Equipment, Inc. (Machine & Foundry Div.) 72
McLeod Leather & Belting Co. 75
Meadows Mfg. Co. 55
Mill Devices Co. (Div. of A. B. Carter, Inc.) —
Mitcham & Co., Harley 44
Mooresville Iron Works, Inc. 70
Moretex Chemical Products, Inc. —

National Aniline Div., Allied Chemical & Dye Corp. —
National Ring Traveler Co. —
National Starch & Chemical Corp. —
Nopco Chemical Co. (Jacques Wolf Div.) 15
N. Y. & N. J. Lubricant Co. 27

Owings Co., Richard A. 79

Pabst Brewing Co. —
Parks-Cramer Co. —
Penick & Ford, Ltd., Inc. —
Perfecting Service Co. 25
Perkins & Son, Inc., B. F. —
Philadelphia Quartz Co. —
Pilot Life Insurance Co. —
Pneumafil Corp. —
Price Spindle & Flyer Co., Inc. —

Radiator Specialty Co. —
Raybestos-Manhattan, Inc.
  General Asbestos & Rubber Div. 67
Raymond Service, Inc., Chas. P. 79
Reiner, Inc., Robert 13
Rhoads & Sons, J. E. 72
Rice Dobby Chain Co. 52
Ridenhour, Hoyt A. 79
Roberts Company, The 19

Saco-Lowell Shops (Textile Machinery Div.) —
Saco-Lowell Shops (Replacement Parts Div.) 29
Scott Testers, Inc. —
Seydel-Woolley & Co. —
Signode Steel Strapping Co. 14
Sinclair Refining Co. —
Smith Textile Apron Co. 67
Sonoco Products Co. 3
Southern Machinery Co. —
Southern Shuttles Div. (Steel Heddle Mfg. Co.) —
Southern Textile Works 79
Staley Mfg. Co., A. E. (Industrial Div.) —
Star Paper Tube Co., Inc. 26
Steel Heddle Mfg. Co. and Southern Shuttles Div. —
Steel & Tank Service Co. —
Stover Co., Charles G. 79

Tennessee Corp. —
Tensitron, Inc. 79
Terrell Machine Co., Inc., The 34
Textile Apron Co. 71
Textile Hall Corp. 24
Textile Laboratories, The 76
Textile Loom Reed Co. —
Textile Shops, Inc., The —
Thomaston Mills —
Times Square Hotel 78
Todd-Long Picker Apron Co. —
Ton-Tex Corp. 70
Trust Co. of Georgia —
Turner & Chapman 79

U. S. Ring Traveler Co. —
Uster Corp. —

W. L. W. Machine Co. 79
Watson & Desmond 23
West Point Foundry & Machine Co. 59
Whitin Machine Works —
Whitinsville Spinning Ring Co. —
Wolf & Co., Jacques (Div. Nopco Chemical Co.) 15
Wonalancet Co. —

Young Machine Co., F. A. 81

TEXTILE INDUSTRY SCHEDULE

Sept. 8-9 (Th-F)—Fall technical meeting, **TEXTILE QUALITY CONTROL ASSOCIATION**, The Clemson House, Clemson, S. C.

Sept. 8-9 (Th-F)—Annual meeting, **COMBED YARN SPINNERS ASSOCIATION**, The Cloister, Sea Island, Ga.

Sept. 15-16 (Th-F)—Textile Processing Symposium, **AMERICAN GAS ASSOCIATION**, Sedgefield Inn, Greensboro, N. C.

Sept. 15-16 (Th-F)—Annual outing, **CHATTANOOGA YARN ASSOCIATION**, The Read House, Chattanooga, Tenn.

Sept. 17 (Sa)—Family outing, **SOUTHERN TEXTILE OVERSEERS ASSOCIATION**, Greenwood, S. C.

Sept. 28-29 (W-Th)—The ninth annual **CHEMICAL FINISHING CONFERENCE**, sponsored by the National Cotton Council, Statler Hotel, Washington, D. C.

Sept. 28-30 (W-F)—Annual meeting, **NORTH CAROLINA TEXTILE MANUFACTURERS ASSOCIATION**, Carolina Hotel, Pinehurst, N. C.

Oct. 3-7 (M-F)—The 21st **SOUTHERN TEXTILE EXPOSITION**, Textile Hall, Greenville, S. C.

Oct. 6-8 (Th-Sa)—National convention, **AMERICAN ASSOCIATION OF TEXTILE CHEMISTS & COLORISTS**, Sheraton Hotel, Philadelphia, Pa.

Oct. 7 (F)—Annual meeting, **SOUTHERN TEXTILE OVERSEERS ASSOCIATION**, Hotel Greenville, Greenville, S. C. (6 P. M.)

Oct. 18-19 (Tu-W)—Technical Advisory Committee and Board of Trustees Meeting, **INSTITUTE OF TEXTILE TECHNOLOGY**, Charlottesville, Va.

Oct. 18-21 (Tu-F)—Fall meeting, **COMMITTEE D-13, A.S.T.M.**, Sheraton-Atlantic Hotel, New York City.

Oct. 19-22 (W-Sa)—Annual meeting, **CARDED YARN ASSOCIATION**, The Grove Park Inn, Asheville, N. C.

Oct. 27-28 (Th-F)—Fall meeting, **THE FIBER SOCIETY**, Washington Hotel, Washington, D. C.

Oct. 22 (Sa)—Fall meeting, **ALABAMA TEXTILE EDUCATION FOUNDATION**, Auburn University, Auburn, Ala.

Nov. 12 (Sa)—Fall meeting, **ALABAMA TEXTILE OPERATING EXECUTIVES**, Thach Auditorium, Auburn University, Auburn, Ala. (Carding and Spinning Section).

Nov. 12 (Sa)—Annual meeting, **GEORGIA TEXTILE EDUCATION FOUNDATION**, A. French Textile School, Georgia Tech, Atlanta.

— 1961 —

Apr. 26-29 (W-Sa)—Annual meeting, **GEORGIA TEXTILE MANUFACTURERS ASSOCIATION**, Hollywood Beach Hotel, Hollywood, Fla.

(M) Monday; (Tu) Tuesday; (W) Wednesday; (Th) Thursday; (F) Friday; (Sa) Saturday

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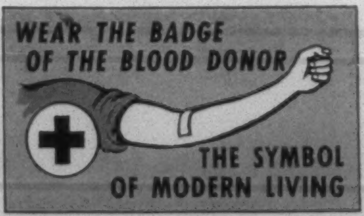

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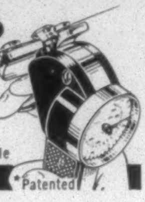

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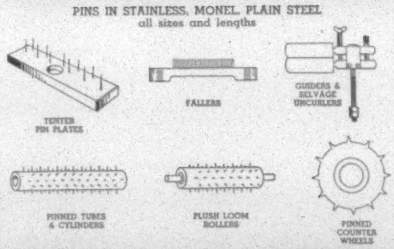

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VOL. 86 AUGUST 1960 NO. 8

This issue of TEXTILE BULLETIN . . .

. . . features

The 1960 Cotton Research Clinic
Highlights From The National Cotton Council's
Annual Workshop For Cotton Textile Researchers 35

The Loomfixer And His Job (Part 20)
Proper Adjustment Of Shuttle Boxes
Is A Must For Efficient Loom Operation
By Wilmer Westbrook 45

Eagle & Phenix Rearranges Its Cloth Room
The New Layout Is Designed To Provide
Straight Flow Of Materials, Minimum Handling 46

The Southern Textile Association
Holds Its 52nd Annual Meeting In Asheville
R. M. McCrary, Hart Cotton Mills, Tarboro, N. C.,
Named President Of The Association For 1960-61 49

The Use Of Package Drive Units
To Provide D.C. Power To The Mill
More And More Mills Are Using Package Drive Units
To Effectively Meet Their Needs For D.C. Power
By Donald M. Sibley 53

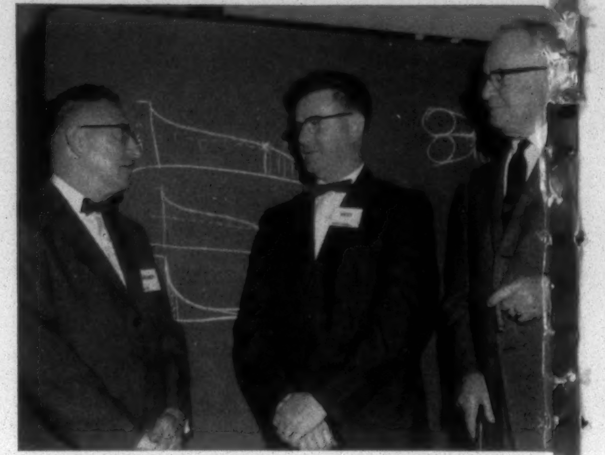
Conducting A Mill Training Program (Part 2)
Improving The Skills Of Workers Already On The Job
By C. Ross Beall 54

How % CV Can Help You Control Production
Plants With Progressive Quality Control Programs
Are Using % CV To Evaluate Their Test Results
By W. N. Lilly 57

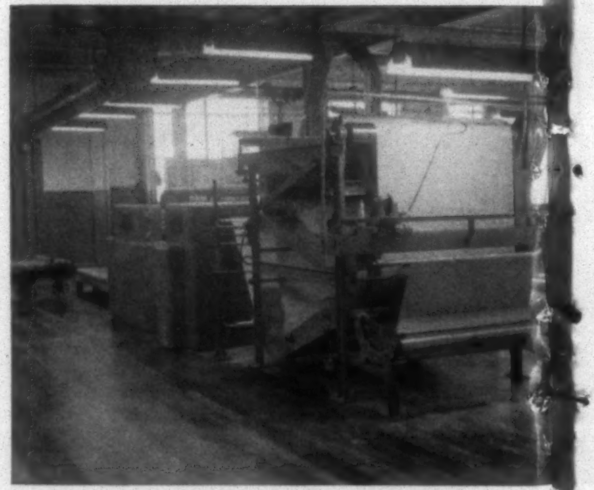
The Designing Of Pile Fabrics (Chapter 9)
The Weaving Of Frieze Can Present Special Problems
By E. B. Berry 61

. . . and includes

New Products 18
New Literature 25
News of Suppliers 30
Personals 73
Obituaries 76
Mill News 76
Editorials 77
Textile Industry Schedule 78
Index To Advertisers 78
Classified Advertising 79



Cotton Research Clinic, Page 35



Straight material flow, Page 46

The S.T.A. convention, Page 49

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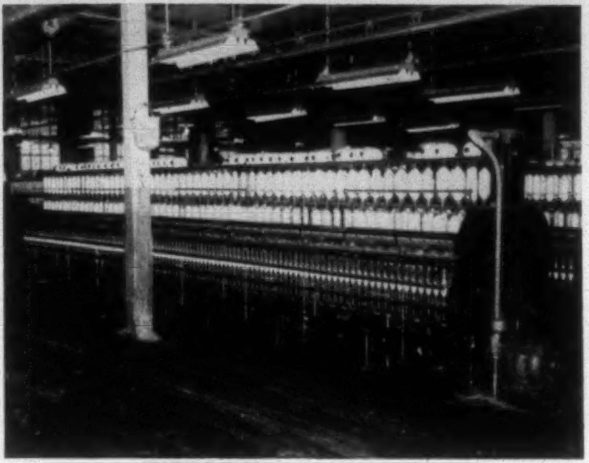
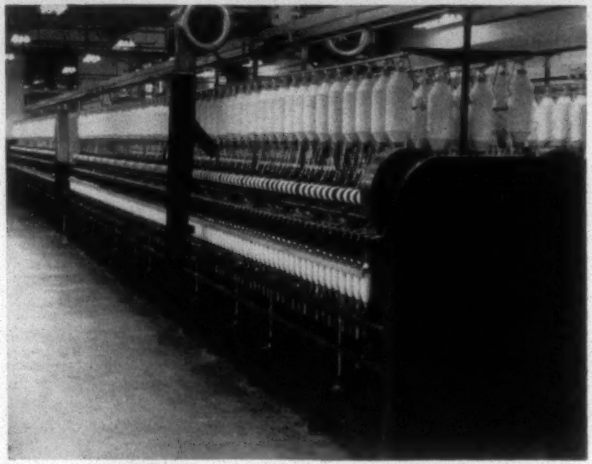
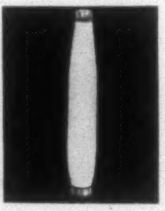


BEFORE 2¾" gauge

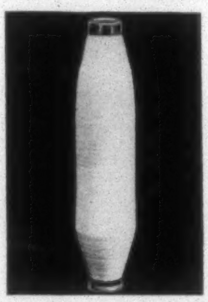


AFTER (same frames) 3¾" gauge

FROM - 7" Bobbin



To - 11" Bobbin



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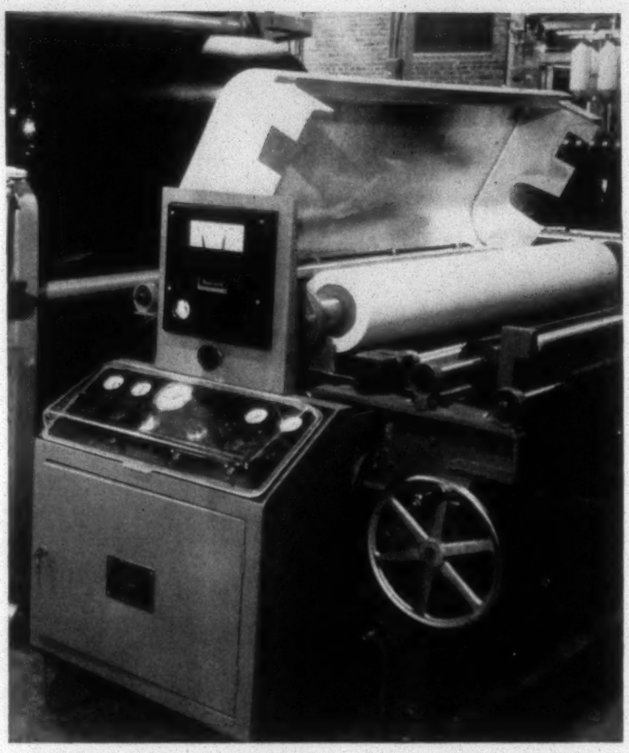

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